```
FILE 'REGISTRY' ENTERED AT 10:39:00 ON 24 JUL 2007
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.
COPYRIGHT (C) 2007 American Chemical Society (ACS)

Property values tagged with IC are from the ZIC/VINITI data file
provided by InfoChem.

STRUCTURE FILE UPDATES:   23 JUL 2007  HIGHEST RN 943188-87-2
DICTIONARY FILE UPDATES:  23 JUL 2007  HIGHEST RN 943188-87-2

New CAS Information Use Policies, enter HELP USAGETERMS for details.

TSCA INFORMATION NOW CURRENT THROUGH December 2, 2006

  Please note that search-term pricing does apply when
  conducting SmartSELECT searches.

REGISTRY includes numerically searchable data for experimental and
predicted properties as well as tags indicating availability of
experimental property data in the original document.  For information
on property searching in REGISTRY, refer to:

http://www.cas.org/support/stngen/stndoc/properties.html

                E SODIUM HYDROXIDE/CN 5
L1            8 S E3-10
                E AGAROSE/CN 5
L2            1 S E3

FILE 'HCAPLUS' ENTERED AT 10:39:00 ON 24 JUL 2007
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.
COPYRIGHT (C) 2007 AMERICAN CHEMICAL SOCIETY (ACS)


Copyright of the articles to which records in this database refer is
held by the publishers listed in the PUBLISHER (PB) field (available
for records published or updated in Chemical Abstracts after December
26, 1996), unless otherwise indicated in the original publications.
The CA Lexicon is the copyrighted intellectual property of the
the American Chemical Society and is provided to assist you in searching
databases on STN.  Any dissemination, distribution, copying, or storing
of this information, without the prior written consent of CAS, is
strictly prohibited.

FILE COVERS 1907 - 24 Jul 2007  VOL 147 ISS 5
FILE LAST UPDATED: 23 Jul 2007  (20070723/ED)

New CAS Information Use Policies, enter HELP USAGETERMS for details.

 This file contains CAS Registry Numbers for easy and accurate
 substance identification.

L3         8237 SEA FILE=HCAPLUS ABB=ON  PLU=ON  ZEBRAFISH OR ZEBRA(W)(FISH
                 OR DANIO) OR RERIO
L4            9 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L3 AND (LASER(S)(THERAPY
                 OR BIOSTIMUL? OR (BIO OR BIOL?)(W)STIMUL? OR IRRADIAT? OR
                 RADIAT?) OR LLLT)
```

L1 8 SEA FILE=REGISTRY ABB=ON PLU=ON ("SODIUM HYDROXIDE"/CN OR "SODIUM HYDROXIDE (22NA(OH))"/CN OR "SODIUM HYDROXIDE (24NA(OH))"/CN OR "SODIUM HYDROXIDE (NA(17OH))"/CN OR "SODIUM HYDROXIDE (NA(18OD))"/CN OR "SODIUM HYDROXIDE (NA(18OH))"/CN OR "SODIUM HYDROXIDE (NA(18OT))"/CN OR "SODIUM HYDROXIDE (NA(OD))"/CN)
L3 8237 SEA FILE=HCAPLUS ABB=ON PLU=ON ZEBRAFISH OR ZEBRA(W)(FISH OR DANIO) OR RERIO
L5 3 SEA FILE=HCAPLUS ABB=ON PLU=ON L3 AND (L1 OR (NA OR SODIUM)(W)(OH OR HYDROXIDE) OR NAOH)

L2 1 SEA FILE=REGISTRY ABB=ON PLU=ON AGAROSE/CN
L3 8237 SEA FILE=HCAPLUS ABB=ON PLU=ON ZEBRAFISH OR ZEBRA(W)(FISH OR DANIO) OR RERIO
L6 10 SEA FILE=HCAPLUS ABB=ON PLU=ON L3 AND (L2 OR AGAROSE OR SEPHAROSE)
L7 1 SEA FILE=HCAPLUS ABB=ON PLU=ON L6 AND IMMOBIL?

L8 12 S L4 OR L5 OR L7

L8 ANSWER 1 OF 12 HCAPLUS COPYRIGHT 2007 ACS on STN
ED Entered STN: 10 Apr 2007
ACCESSION NUMBER: 2007:394033 HCAPLUS Full-text
TITLE: Pattern regulation in the stripe of **zebrafish** suggests an underlying dynamic and autonomous mechanism
AUTHOR(S): Yamaguchi, Motoomi; Yoshimoto, Eiichi; Kondo, Shigeru
CORPORATE SOURCE: Laboratory for Positional Information, RIKEN Center for Developmental Biology, 2-2-3 Minatojima-Minamimachi, Chuo-ku, Kobe, 650-0047, Japan
SOURCE: Proceedings of the National Academy of Sciences of the United States of America (2007), 104(12), 4790-4793
CODEN: PNASA6; ISSN: 0027-8424
PUBLISHER: National Academy of Sciences
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The mechanism by which animal markings are formed is an intriguing problem that has remained unsolved for a long time. One of the most important questions is whether the positional information for the pattern formation is derived from a covert prepattern or an autonomous mechanism. In this study, using the **zebrafish** as the model system, we attempted to answer this classic question. We ablated the pigment cells in limited areas of **zebrafish** skin by using **laser irradiation**, and we observed the regeneration of the pigmentation pattern. Depending on the area ablated, different patterns regenerated in a specific time course. The regenerated patterns and the transition of the stripes during the regeneration process suggest that pattern formation is independent of the prepattern; furthermore, pattern formation occurs by an autonomous mechanism that satisfies the condition of "local self-enhancement and long-range inhibition." Because the **zebrafish** is the only striped animal for which detailed mol. genetic studies have been conducted, our finding will facilitate the identification of the mol. and cellular mechanisms that underlie skin pattern formation.

L8 ANSWER 2 OF 12 HCAPLUS COPYRIGHT 2007 ACS on STN
ED Entered STN: 06 Dec 2006
ACCESSION NUMBER: 2006:1273513 HCAPLUS Full-text
DOCUMENT NUMBER: 146:151361
TITLE: Adaptive wavefront correction in two-photon microscopy using coherence-gated wavefront sensing
AUTHOR(S): Rueckel, Markus; Mack-Bucher, Julia A.; Denk, Winfried
CORPORATE SOURCE: Department of Biomedical Optics, Max-Planck Institute for Medical Research, Heidelberg, D-69120, Germany
SOURCE: Proceedings of the National Academy of Sciences of the United States of America (2006), 103(46), 17137-17142
CODEN: PNASA6; ISSN: 0027-8424
PUBLISHER: National Academy of Sciences
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The image quality of a two-photon microscope is often degraded by wavefront aberrations induced by the specimen. The authors demonstrate here that resolution and signal size in two-photon microcopy can be substantially improved, even in living biol. specimens, by adaptive wavefront correction based on sensing the wavefront of coherence-gated backscattered light (coherence-gated wavefront sensing, CGWS) and wavefront control by a deformable mirror. A nearly diffraction-limited focus can be restored even for strong aberrations. CGWS-based wavefront correction should be applicable to samples with a wide range of scattering properties and it should be possible to perform real-time pixel-by-pixel correction even at fast scan speeds.
REFERENCE COUNT: 38 THERE ARE 38 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 3 OF 12 HCAPLUS COPYRIGHT 2007 ACS on STN
ED Entered STN: 14 Apr 2006
ACCESSION NUMBER: 2006:343340 HCAPLUS Full-text
DOCUMENT NUMBER: 144:365940
TITLE: Laser apparatus and method for manipulating cells
INVENTOR(S): Elezzabi, Abdulhakem; Acker, Jason; Kohli, Vikram
PATENT ASSIGNEE(S): Canadian Blood Services, Can.
SOURCE: PCT Int. Appl., 105 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2006037236	A1	20060413	WO 2005-CA1556	20051011

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD,

TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

PRIORITY APPLN. INFO.: US 2004-616622P P 20041008

AB An apparatus and system employing laser energy to manipulate cells and biol. compns. or systems are provided. An apparatus and method of the present invention advantageously allow the manipulation of cellular structures and biol. compns., in a substantially non-invasive manner. An apparatus or method as embodied by the present invention employs laser energy, and preferably femtosecond laser pulses, to manipulate cells, cellular structures and/or biol. compns. According to the present invention, laser energy may be employed to manipulate physiol. and/or chemical properties of such substrates, both in vivo and in vitro. Localized femtosecond laser pulses were used to precisely isolate individual cells as well as perform membrane surgery. Sucrose was transfected into cells by laser perforation of the membrane.

REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 4 OF 12 HCAPLUS COPYRIGHT 2007 ACS on STN
ED Entered STN: 24 Mar 2006
ACCESSION NUMBER: 2006:273002 HCAPLUS Full-text
DOCUMENT NUMBER: 144:286151
TITLE: High throughput method and system for screening candidate compounds for activity against epilepsy and other neurological diseases
INVENTOR(S): Pieribone, Vincent A.
PATENT ASSIGNEE(S): John B. Pierce Laboratory, USA
SOURCE: U.S. Pat. Appl. Publ., 24 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2006063202	A1	20060323	US 2005-201575	20050811
PRIORITY APPLN. INFO.:			US 2004-600493P	P 20040811

AB Methods and systems of compound screening are provided. Screening methods and instrumentation for candidate pharmacol. agents are applied to discover compds. with particular activity against epilepsy. The method employs teleost fish, such as the medaka (Oryzias latipes), which are stimulated with a threshold elec. field to produce convulsive behavior. The convulsive behavior is recorded optically and elec. Antagonism of the convulsive behavior is produced by application of candidate pharmacol. agents to the well containing the fish. The method can include stimulation and antagonism in a plurality of sample wells with a repetitive or simultaneous application of threshold elec. fields. The methods and instrumentation can be applied to the study of other serious neurol. diseases such as neuropathic pain.

L8 ANSWER 5 OF 12 HCAPLUS COPYRIGHT 2007 ACS on STN
ED Entered STN: 10 Jan 2006
ACCESSION NUMBER: 2006:21491 HCAPLUS Full-text
DOCUMENT NUMBER: 144:268706
TITLE: Optimization of operating conditions for the determination of perchlorate in biological samples using preconcentration/preelution ion

chromatography
AUTHOR(S): Canas, Jaclyn E.; Cheng, Qiuqiong; Tian, Kang; Anderson, Todd A.
CORPORATE SOURCE: Department of Environmental Toxicology, Institute of Environmental and Human Health, Texas Tech University, Lubbock, TX, 79409, USA
SOURCE: Journal of Chromatography, A (2006), 1103(1), 102-109
CODEN: JCRAEY; ISSN: 0021-9673
PUBLISHER: Elsevier B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Perchlorate originates as a contaminant in the environment from the use of salts in the manufacture of solid rocket fuels and munitions. Monitoring potential perchlorate contamination in the environment is of interest, however, very few anal. methods have been developed for perchlorate determination in biol. samples. Anal. of complex samples by ion chromatog. is complicated by matrix components that can interfere with perchlorate determination However, a recently developed preconcn./preelution (PC/PE) ion chromatog. method has demonstrated the capability to analyze certain complex samples such as high salinity water, milk, and hydroponic fertilizers. The ability of this method to reduce sample background and lower detection limits in ion chromatog. for various biol. samples was evaluated in this study. The PC/PE method was applicable to the anal. of kidneys, livers, **zebrafish**, quail eggs, lettuce, and urine. Optimal operating conditions were determined for each matrix. Ranges of optimal wash vols. were shorter when 15 mM **NaOH** prewash solns. were used compared with 10 mM and good recovery was achieved for most matrixes with an injection period ≥60 s. Prewash solution concentration did not appear to significantly affect matrix background. The PC/PE method was capable of reducing sample background when compared to EPA Method 314.0, which resulted in detection limits, with the exception of **zebrafish** and urine, that were two-fold lower than those achieved with EPA Method 314.0.
REFERENCE COUNT: 31 THERE ARE 31 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 6 OF 12 HCAPLUS COPYRIGHT 2007 ACS on STN
ED Entered STN: 29 Oct 2004
ACCESSION NUMBER: 2004:905864 HCAPLUS Full-text
DOCUMENT NUMBER: 141:344568
TITLE: Screening methods using **zebrafish** to identify thrombotic and anti-thrombotic compounds and genes
INVENTOR(S): Jagadeeswaran, Pudur
PATENT ASSIGNEE(S): Board of Regents, the University of Texas System, USA
SOURCE: PCT Int. Appl., 62 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004092325	A2	20041028	WO 2003-US41249	20031224
WO 2004092325	A3	20050303		

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,

GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

AU 2003303742	A1	20041104	AU 2003-303742	20031224
US 2005244808	A1	20051103	US 2005-525571	20050630
PRIORITY APPLN. INFO.:			US 2002-436270P	P 20021224
			US 2003-456774P	P 20030321
			WO 2003-US41249	W 20031224

AB Disclosed are improved methods using **zebrafish** to identifying anti-thrombotic substances for use in therapy and to identify genes associated with all aspects of thrombus formation, including those associated with an increased risk of thrombosis in human. The preferred screening assays described include **laser irradiation** injury, **sodium hydroxide**-induced gill bleeding and red cell lysis assays conducted in **zebrafish** and applicable to the study of thrombosis in human.

IT **1310-73-2**, **Sodium hydroxide**, uses
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses) (screening methods using **zebrafish** to identify thrombotic and anti-thrombotic compds. and genes)

L8 ANSWER 7 OF 12 HCAPLUS COPYRIGHT 2007 ACS on STN
ED Entered STN: 08 Oct 2004
ACCESSION NUMBER: 2004:822942 HCAPLUS Full-text
DOCUMENT NUMBER: 141:288996
TITLE: Screening method for the identification of new proteome-interacting compounds
INVENTOR(S): Gavin, Anne-Claude; Grandi, Paola; Kruse, Ulrich
PATENT ASSIGNEE(S): Cellzome AG, Germany
SOURCE: Eur. Pat. Appl., 15 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1464960	A1	20041006	EP 2003-7690	20030403
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
PRIORITY APPLN. INFO.:			EP 2003-7690	20030403

AB The invention relates to the search for new drugs and in particular to a method for screening a library of potentially proteome-interacting candidate compds. for identifying a protein/protein-complex- interacting compound and thereby further identifying a proteome-interacting compound Furthermore, new and yet unidentified interactions between the proteome and compds. can be identified using the method according to the invention.

IT **9012-36-6**, **Sepharose 9012-36-6D**, **Sepharose**, NHS-activated

RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(screening method for identification of new proteome-interacting compds.)

L8 ANSWER 8 OF 12 HCAPLUS COPYRIGHT 2007 ACS on STN
ED Entered STN: 22 Jan 2003
ACCESSION NUMBER: 2003:52866 HCAPLUS Full-text
DOCUMENT NUMBER: 139:67137
TITLE: Genetic Analysis of Hemostasis and Thrombosis Using Vascular Occlusion
AUTHOR(S): Gregory, Michael; Hanumanthaiah, Ravikumar; Jagadeeswaran, Pudur
CORPORATE SOURCE: Dept. of Cellular and Structural Biology, The Univ. of Texas Health Science Center at San Antonio, San Antonio, TX, 78229, USA
SOURCE: Blood Cells, Molecules & Diseases (2002), 29(3), 286-295
CODEN: BCMDFX; ISSN: 1079-9796
PUBLISHER: Elsevier Science
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The **zebrafish** is an excellent model for mammalian hemostasis and thrombosis since it possesses coagulation factors, thrombocyte receptors and responds to anti-coagulant and anti-platelet drugs commonly used in clin. treatment. In this study, exposure of larvae to FeCl3 or **laser irradiation** produced a vessel injury that caused a visible vascular occlusion as a result of thrombus formation. Using the time to vascular occlusion as an assay, two screening strategies were tested for their utility in identifying novel genes involved in thrombosis. Morpholino knockdown studies of **zebrafish** factor VII showed a prolongation of the time to occlusion of the vessel whereas knockdown of the recently discovered factor VIIi resulted in a shortening of the time. Genetic screening of a population of **zebrafish** identified mutants that showed a prolongation of the time to occlusion. Bulk segregant anal. showed linkage of one mutant to a locus, victoria, on linkage group 7. Thus, the vascular occlusion assay developed in this report measures in vivo thrombus formation and is a powerful tool for identifying novel genes involved in thrombosis.
REFERENCE COUNT: 29 THERE ARE 29 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 9 OF 12 HCAPLUS COPYRIGHT 2007 ACS on STN
ED Entered STN: 07 May 2001
ACCESSION NUMBER: 2001:323904 HCAPLUS Full-text
DOCUMENT NUMBER: 136:113265
TITLE: Laser-induced gene expression
AUTHOR(S): Shoji, Wataru; Maeda-Sato, Mika
CORPORATE SOURCE: Research Institute for Geriatrics, Tohoku University, Japan
SOURCE: Saibo Kogaku (2001), 20(3), 428-433
CODEN: SAKOEO; ISSN: 0287-3796
PUBLISHER: Shujunsha
DOCUMENT TYPE: Journal
LANGUAGE: Japanese
AB A technol. using laser microbeam to induce expression of transgene in the very specific tissue areas of the transgenic animal was described. Heat sensitive promoter region of heat shock protein 70 gene was introduced into transgene and this promoter was activated by the heat generated by the beam **irradiation** of the nitrogen gas **laser.** As the beam could be focused as narrow as 1 μm, gene expression of the introduced transgene could be activated in the

restricted point in the target cells at microscopic level. Transgenic **zebra fish** system was referred as the most suitable animal system in applying this method because of its oviparity and transparency of the embryo. As an example of practical application of this method, cellular lineage during nervous development of **zebra fish** was analyzed using green fluorescence protein. In another experiment, the role of semaphorin in **zebrafish** axon guidance was also analyzed in hsp70-sema3A1 transgenic line by inducing expression by the laser beam in the specific cells. As some tech. aspects that need future improvement, more precise spacial controls of beam irradiation to cover various depths and widths of the target regions were pointed out.

L8 ANSWER 10 OF 12 HCAPLUS COPYRIGHT 2007 ACS on STN
ED Entered STN: 06 Jun 2000
ACCESSION NUMBER: 2000:373487 HCAPLUS Full-text
DOCUMENT NUMBER: 133:291681
TITLE: Laser-induced gene expression in specific cells of transgenic **zebrafish**
AUTHOR(S): Halloran, Mary C.; Sato-Maeda, Mika; Warren, James T., Jr.; Su, Fengyun; Lele, Zsolt; Krone, Patrick H.; Kuwada, John Y.; Shoji, Wataru
CORPORATE SOURCE: Department of Biology, University of Michigan, Ann Arbor, MI, 48109-1048, USA
SOURCE: Development (Cambridge, United Kingdom) (2000), 127(9), 1953-1960
CODEN: DEVPED; ISSN: 0950-1991
PUBLISHER: Company of Biologists Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Over the past few years, a number of studies have described the generation of transgenic lines of **zebrafish** in which expression of reporters was driven by a variety of promoters. These lines opened up the real possibility that transgenics could be used to complement the genetic anal. of **zebrafish** development. Transgenic lines in which the expression of genes can be regulated both in space and time would be especially useful. Therefore, we have cloned the **zebrafish** promoter for the inducible hsp70 gene and made stable transgenic lines of **zebrafish** that express the reporter green fluorescent protein gene under the control of a hsp70 promoter. At normal temps., green fluorescent protein is not detectable in transgenic embryos with the exception of the lens, but is robustly expressed throughout the embryo following an increase in ambient temperature Furthermore, we have taken advantage of the accessibility and optical clarity of the embryos to express green fluorescent protein in individual cells by focussing a sublethal laser microbeam onto them. The targeted cells appear to develop normally: cells migrate normally, neurons project axons that follow normal pathways, and progenitor cells divide and give rise to normal progeny cells. By generating other transgenic lines in which the hsp70 promoter regulates genes of interest, it should be possible to examine the in vivo activity of the gene products by laser-inducing specific cells to express them in **zebrafish** embryos. As a first test, we laser-induced single muscle cells to make **zebrafish** Sema3A1, a semaphorin that is repulsive for specific growth cones, in a hsp70-sema3A1 transgenic line of **zebrafish** and found that extension by the motor axons was retarded by the induced muscle.
REFERENCE COUNT: 50 THERE ARE 50 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 11 OF 12 HCAPLUS COPYRIGHT 2007 ACS on STN
ED Entered STN: 01 Feb 1999
ACCESSION NUMBER: 1999:64450 HCAPLUS Full-text

DOCUMENT NUMBER: 130:293364
TITLE: Cell lineage tracing in heart development
AUTHOR(S): Serluca, Fabrizio C.; Fishman, Mark C.
CORPORATE SOURCE: Cardiovascular Research Center, Massachusetts General Hospital, Charlestown, MA, 02129, USA
SOURCE: Methods in Cell Biology (1999), 59(Zebrafish: Biology), 359-365
CODEN: MCBLAG; ISSN: 0091-679X
PUBLISHER: Academic Press
DOCUMENT TYPE: Journal; General Review
LANGUAGE: English

AB A review with numerous refs. and the authors' own studies. We review here a method to define cell lineage in the living embryo using fluorescent dextrans. In particular we focus upon its use in defining the location and regulative properties of organ fields. The borders of embryonic fields were first defined by explantation and extirpation. Within the borders there was noted to be a gradient of propensity to become the particular tissue. In addition fields were found to "regulate," in that their surgical removal would be repaired by the embryo until just before the formation of the tissue. The mechanisms for border alignment and regulation are not known and can be assessed only by accurate lineage definition in vivo. In this chapter we describe a detailed protocol for the use of a laser-activated caged-dextran lineage tracer in the anal. of embryonic fields in the **zebrafish.** This technique is an adaptation of the method originally described for use in Drosophila and adds a straightforward and powerful method for precise cellular labeling of late-stage embryos. The information about stage-specific lineage restrictions and regulative potential defined by this method complement the mol. anal. of the many available mutants that perturb the fashioning of organ form and function. The laser-based method we describe allows the labeling of precise regions rapidly in a large number of living embryos by filling with the caged tracer in the early-cleavage stages and subsequently activating the tracer using focused laser light. (c) 1999 Academic Press.

REFERENCE COUNT: 18 THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 12 OF 12 HCAPLUS COPYRIGHT 2007 ACS on STN
ED Entered STN: 12 May 1984
ACCESSION NUMBER: 1968:484542 HCAPLUS Full-text
DOCUMENT NUMBER: 69:84542
TITLE: Changed feeding rate of Brachydanio **rerio** resulting from exposure to sublethal concentrations of zinc, potassium dichromate, and alkylbenzenesulfonate detergent
AUTHOR(S): Cairns, John, Jr.; Loos, Jules J.
CORPORATE SOURCE: Acad. Nat. Sci. of Philadelphia, Philadelphia, PA, USA
SOURCE: Proceedings of the Pennsylvania Academy of Science (1967), 40(2), 47-52
CODEN: PPASAK; ISSN: 0096-9222
DOCUMENT TYPE: Journal
LANGUAGE: English

AB **Zebra danios** (Brachydanio **rerio**) were exposed to 3.7 and 6.7 ppm. Zn++, 56 and 75 ppm. K2Cr2O7, and 10 and 32 ppm. of an alkylbenzenesulfonate (I) mixture (containing I 54.8, Na2SO4 40.3, free oil 0.5, **NaOH** 1.3, Na2CO3 0.7, and H2O 2.6%) and the time required to consume 10 of 20 pieces of Tubifex worms was determined at 0, 24, 48, 72, and 96 hrs. The individual response varied markedly but after 96 hrs. exposure, the majority of the fish took longer to consume the food than the controls.

FILE 'MEDLINE' ENTERED AT 10:39:01 ON 24 JUL 2007

FILE 'BIOSIS' ENTERED AT 10:39:01 ON 24 JUL 2007

FILE 'EMBASE' ENTERED AT 10:39:01 ON 24 JUL 2007

FILE 'WPIX' ENTERED AT 10:39:01 ON 24 JUL 2007

FILE 'JAPIO' ENTERED AT 10:39:01 ON 24 JUL 2007

FILE 'PASCAL' ENTERED AT 10:39:01 ON 24 JUL 2007

FILE 'DISSABS' ENTERED AT 10:39:01 ON 24 JUL 2007

FILE 'CABA' ENTERED AT 10:39:01 ON 24 JUL 2007

FILE 'AGRICOLA' ENTERED AT 10:39:01 ON 24 JUL 2007

FILE 'VETU' ENTERED AT 10:39:01 ON 24 JUL 2007

FILE 'VETB' ENTERED AT 10:39:01 ON 24 JUL 2007

L9 14 S L4
L10 7 S L5
L11 5 S L7
L12 24 S L9 OR L10 OR L11
L13 15 DUP REM L12 (9 DUPLICATES REMOVED)

L13 ANSWER 1 OF 15 MEDLINE on STN DUPLICATE 1
ACCESSION NUMBER: 2007172383 MEDLINE Full-text
DOCUMENT NUMBER: PubMed ID: 17360399
TITLE: Pattern regulation in the stripe of **zebrafish** suggests an underlying dynamic and autonomous mechanism.
AUTHOR: Yamaguchi Motoomi; Yoshimoto Eiichi; Kondo Shigeru
CORPORATE SOURCE: Laboratory for Positional Information, RIKEN Center for Developmental Biology, 2-2-3 Minatojima-Minamimachi, Chuo-ku, Kobe 650-0047, Japan.
SOURCE: Proceedings of the National Academy of Sciences of the United States of America, (2007 Mar 20) Vol. 104, No. 12, pp. 4790-3. Electronic Publication: 2007-03-12. Journal code: 7505876. ISSN: 0027-8424.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE) (RESEARCH SUPPORT, NON-U.S. GOV'T)
LANGUAGE: English

FILE SEGMENT: Priority Journals
ENTRY MONTH: 200704
ENTRY DATE: Entered STN: 24 Mar 2007
Last Updated on STN: 1 May 2007
Entered Medline: 30 Apr 2007

AB The mechanism by which animal markings are formed is an intriguing problem that has remained unsolved for a long time. One of the most important questions is whether the positional information for the pattern formation is derived from a covert prepattern or an autonomous mechanism. In this study, using the **zebrafish** as the model system, we attempted to answer this classic question. We ablated the pigment cells in limited areas of **zebrafish** skin by using **laser irradiation**, and we observed the regeneration of the pigmentation pattern. Depending on the area ablated, different patterns regenerated in a specific time course. The regenerated patterns and the transition of the stripes during the regeneration process suggest that pattern formation is independent of the prepattern; furthermore, pattern formation occurs by an autonomous mechanism that satisfies the condition of "local self-enhancement and long-range inhibition." Because the **zebrafish** is the only striped animal for which detailed molecular genetic studies have been conducted, our finding will facilitate the identification of the molecular and cellular mechanisms that underlie skin pattern formation.

L13 ANSWER 2 OF 15 DISSABS COPYRIGHT (C) 2007 ProQuest Information and Learning Company; All Rights Reserved on STN
ACCESSION NUMBER: 2007:37892 DISSABS Order Number: AAI3238687
TITLE: Mutational analysis of **zebrafish** melanocyte regeneration
AUTHOR: Yang, Chao-Tsung [Ph.D.]; Johnson, Stephen L. [advisor]
CORPORATE SOURCE: Washington University in St. Louis (0252)
SOURCE: Dissertation Abstracts International, (2006) Vol. 67, No. 10B, p. 5531. Order No.: AAI3238687. 125 pages.
ISBN: 978-0-542-92679-2.
DOCUMENT TYPE: Dissertation
FILE SEGMENT: DAI
LANGUAGE: English
ENTRY DATE: Entered STN: 20070702
Last Updated on STN: 20070702

AB Modern regeneration studies have been shaped by the stem cell concept. I sought to develop a single cell-type regeneration paradigm by using **zebrafish** larval melanocytes to understand the mechanisms regulating the stem cells during regeneration. Two methods have been developed to ablate larval melanocytes in **zebrafish** for studying the subsequent melanocyte regeneration. The first method is the utilization of a Nd:YAG Q-switched dermatology **laser** that emits 532 nm light. I showed that the energy of this monochromatic **radiation** is selectively absorbed by the melanin and consequently specifically ablates melanocytes. Following **laser** ablation, larval melanocytes regenerate from undifferentiated precursors or stem cells through a process requiring the kit receptor tyrosine kinase. The second melanocyte ablation method was developed by the discovery that a small molecule, (2-morpholinobutyl)-4- thiophenol(MoTP), causes melanocyte-specific cytotoxicity mediated by tyrosinase activity in **zebrafish** larvae. Following melanocyte ablation by MoTP treatment, I demonstrated by BrdU incorporation experiments that virtually all regenerated melanocytes arise from the cell division of otherwise quiescent melanocyte precursors or stem cells. My melanocyte regeneration analyses on wild-type and kitj1e99 larvae suggest that a small number of melanocyte precursors or stem cells in larvae are drawn upon to reconstitute the larval melanocyte population following melanocyte ablation by MoTP.

The ease of ablating melanocytes by MoTP allowed me to conduct a forward genetic screen for mutations specific to regeneration. I identified two mutants, earthaj23e1 and juliej24e1 , that have normal development of ontogenetic melanocytes, but fail to fully regenerate their melanocytes following melanocyte ablation by MoTP. My analyses of melanocyte differentiation during regeneration reveal that eartha specifically regulates melanocyte maturation (melanin production) at a late stage. Positional cloning reveals that the eartha j23e1 mutation is a nonsense mutation in gfpt1, a key enzyme in the synthesis of UDP-N-acetylglucosamine (UDP-GlcNAc). UDP-GlcNAc is a building block for an extracellular matrix component in the connective tissue. The molecular identification of eartha raises the possibility that gfpt1 promotes the proper formation of extracellular matrix that is specifically required for melanocyte maturation during regeneration. I identified the juliej24e1 mutation as a splice-site mutation in skiv2l2, a predicted DEAD-box RNA helicase regulating RNA metabolism in the nucleus. The in situ hybridization analyses reveal that skiv2l2 plays an important role in cell proliferation, presumably regulating melanoblast proliferation during melanocyte regeneration. Previously, we have showed that the cell division plays a role during larval melanocyte regeneration. The finding that skiv2l2 is required for cell division demonstrates that my parthenogenesis screen is capable of finding relevant mechanisms for regeneration. This thesis work provides a unique genetic perspective of how melanocyte precursors or stem cells are recruited to enter the cell cycle and differentiate for regeneration.

L13 ANSWER 3 OF 15 MEDLINE on STN DUPLICATE 2
ACCESSION NUMBER: 2006013502 MEDLINE Full-text
DOCUMENT NUMBER: PubMed ID: 16310204
TITLE: Optimization of operating conditions for the determination of perchlorate in biological samples using preconcentration/preelution ion chromatography.
AUTHOR: Canas Jaclyn E; Cheng Qiuqiong; Tian Kang; Anderson Todd A
CORPORATE SOURCE: Department of Environmental Toxicology, The Institute of Environmental and Human Health, Texas Tech University, P.O. Box 41163, Lubbock, TX 79409, USA.. jaclyn.canas@tiehh.ttu.edu
SOURCE: Journal of chromatography. A, (2006 Jan 20) Vol. 1103, No. 1, pp. 102-9. Electronic Publication: 2005-11-23. Journal code: 9318488. ISSN: 0021-9673.
PUB. COUNTRY: Netherlands
DOCUMENT TYPE: (COMPARATIVE STUDY) Journal; Article; (JOURNAL ARTICLE) (RESEARCH SUPPORT, NON-U.S. GOV'T)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200602
ENTRY DATE: Entered STN: 10 Jan 2006 Last Updated on STN: 28 Feb 2006 Entered Medline: 24 Feb 2006

AB Perchlorate originates as a contaminant in the environment from the use of salts in the manufacture of solid rocket fuels and munitions. Monitoring potential perchlorate contamination in the environment is of interest, however, very few analytical methods have been developed for perchlorate determination in biological samples. Analysis of complex samples by ion chromatography is complicated by matrix components that can interfere with perchlorate determination. However, a recently developed preconcentration/preelution (PC/PE) ion chromatography method has demonstrated

the capability to analyze certain complex samples such as high salinity water, milk, and hydroponic fertilizers. The ability of this method to reduce sample background and lower detection limits in ion chromatography for various biological samples was evaluated in this study. The PC/PE method was applicable to the analysis of kidneys, livers, **zebrafish**, quail eggs, lettuce, and urine. Optimal operating conditions were determined for each matrix. Ranges of optimal wash volumes were shorter when 15 mM **NaOH** prewash solutions were used compared with 10mM and good recovery was achieved for most matrices with an injection period > or =60s. Prewash solution concentration did not appear to significantly affect matrix background. The PC/PE method was capable of reducing sample background when compared to EPA Method 314.0, which resulted in detection limits, with the exception of **zebrafish** and urine, that were two-fold lower than those achieved with EPA Method 314.0.

L13 ANSWER 4 OF 15 CABA COPYRIGHT 2007 CABI on STN

ACCESSION NUMBER: 2006:162389 CABA Full-text
DOCUMENT NUMBER: 20063141130
TITLE: Enhanced vitellogenin induction of secondary effluents by chlorination
AUTHOR: An, L.; Hu, J.; Yang, M.; Jin, F.; Du, Q.; Ke, Z.
CORPORATE SOURCE: State Key Laboratory of Environmental Aquatic Chemistry, Research Center for Eco-Environmental Sciences, Chinese Academy of Sciences, Beijing, 100085, China.
SOURCE: Bulletin of Environmental Contamination and Toxicology, (2006) Vol. 77, No. 1, pp. 67-73. 11 ref.
Publisher: Springer Science + Business Media. Dordrecht
ISSN: 0007-4861
URL: http://www.springerlink.com/link.asp?id=101156
DOI: 10.1007/s00128-006-1033-8
PUB. COUNTRY: Netherlands Antilles
DOCUMENT TYPE: Journal
LANGUAGE: English
ENTRY DATE: Entered STN: 6 Oct 2006
Last Updated on STN: 6 Oct 2006

AB In this study, **zebrafish** (Danio **rerio**), vitellogenin (VTG, zf-VTG) and medaka (Oryzias latipes) larval development were used to monitor the effects of oestrogenic activity in chlorinated secondary effluents from Fangzhuang sewage treatment plants (STP) in Beijing, China, compared to secondary effluents only. Eleven polycyclic aromatic hydrocarbons (PAHs, naphthalene, acenaphthene, phenanthrene, anthracene, fluoranthene, pyrene, benzo(a)anthracene, chrysene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene and dibenzo(a,h)anthracene) were used. The effluents were chlorinated with 5 mg/litre **NaOH** for 2 h. 20 mature male **zebrafish** were exposed to control and chlorinated secondary effluents for 2 weeks, after which VTG was analysed. 40 larval medaka were also exposed to the effluents before and after chlorination for 1, 2, 3 and 4 weeks. PAH levels were also measured in the effluent samples. It was shown that VTG concentration was 1362.1[plusmn]221.7 ng/ml in the chlorinated effluents compared to the control effluent, which was 2236.1[plusmn]1067.6 ng/ml. Acenaphthene, phenanthrene, anthracene, fluoranthene and dibenzo(a,h)anthracene were detected at a total concentration of 887 ng/litre in secondary effluents. Fish larval weights and lengths exposed to chlorinated secondary effluents were lower compared to those in the control group. VTG concentration in chlorinated effluents was 6481.8[plusmn]36825.5 ng/ml. Larval growth in chlorinated effluents was more

rapid than in secondary effluents after 3 weeks of exposure, although it was significantly lower than in the control after 4 weeks of exposure. These results show that the water quality of effluents is improved after chlorination.

L13 ANSWER 5 OF 15 MEDLINE on STN
ACCESSION NUMBER: 2006578901 MEDLINE Full-text
DOCUMENT NUMBER: PubMed ID: 17008908
TITLE: Dose-dependent effects of chemical **immobilization** on the heart rate of embryonic **zebrafish.**
AUTHOR: Craig Michael P; Gilday Steven D; Hove Jay R
CORPORATE SOURCE: Department of Genome Science, Genome Research Institute, University of Cincinnati, Cincinnati, OH 45237, USA.
SOURCE: Lab animal, (2006 Oct) Vol. 35, No. 9, pp. 41-7. Journal code: 0417737. ISSN: 0093-7355.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE) (RESEARCH SUPPORT, NON-U.S. GOV'T) (RESEARCH SUPPORT, U.S. GOV'T, NON-P.H.S.)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200612
ENTRY DATE: Entered STN: 30 Sep 2006
Last Updated on STN: 19 Dec 2006
Entered Medline: 14 Dec 2006

AB The small size and optical transparency of **zebrafish** embryos and larvae greatly facilitate modern intravital microscopic phenotyping of these experimentally tractable laboratory animals. Neither the experimentally derived dose-response relationships for chemicals commonly used in the mounting of live fish larvae, nor their effect on the stress of the animal, are currently available in the research literature. This is particularly problematic for IACUCs attempting to maintain the highest ethical standards of animal care in the face of a recent spate in investigator-initiated requests to use embryonic **zebrafish** as experimental models. The authors address this issue by describing the dose-dependent efficacy of several commonly used chemical mounting treatments and their effect on one stress parameter, embryo heart rate. The results of this study empirically define, for the first time, effective, minimally stressful treatments for **immobilization** and in vivo visualization during early **zebrafish** development.

L13 ANSWER 6 OF 15 WPIX COPYRIGHT 2007 THE THOMSON CORP on STN
ACCESSION NUMBER: 2004-784600 [77] WPIX
DOC. NO. CPI: C2004-274632 [77]
DOC. NO. NON-CPI: N2004-618364 [77]
TITLE: Creating a uniform vascular wound in a **zebrafish** larva or **zebrafish** by **laser irradiation**, useful for screening **zebrafish** to identify anti-thrombotic agents for therapeutic use in humans
DERWENT CLASS: B04; D16; S03
INVENTOR: JAGADEESWARAN P
PATENT ASSIGNEE: (JAGA-I) JAGADEESWARAN P; (TEXA-C) UNIV TEXAS SYSTEM
COUNTRY COUNT: 105

PATENT INFO ABBR.:

PATENT NO	KIND	DATE	WEEK	LA	PG	MAIN IPC
WO 2004092325	A2	20041028	(200477)*	EN	62[0]	
AU 2003303742	A1	20041104	(200508)	EN		
US 20050244808	A1	20051103	(200573)	EN		
AU 2003303742	A8	20051110	(200634)	EN		

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
WO 2004092325	A2	WO 2003-US41249	20031224
US 20050244808	A1 Provisional	US 2002-436270P	20021224
US 20050244808	A1 Provisional	US 2003-456774P	20030321
AU 2003303742	A1	AU 2003-303742	20031224
US 20050244808	A1	WO 2003-US41249	20031224
US 20050244808	A1	US 2005-525571	20050630
AU 2003303742	A8	AU 2003-303742	20031224

FILING DETAILS:

PATENT NO	KIND		PATENT NO	
AU 2003303742	A1	Based on	WO 2004092325	A
AU 2003303742	A8	Based on	WO 2004092325	A

PRIORITY APPLN. INFO: US 2003-456774P 20030321
US 2002-436270P 20021224
US 2005-525571 20050630

AN 2004-784600 [77] WPIX

AB WO 2004092325 A2 UPAB: 20060122

NOVELTY - Creating a uniform vascular wound in a **zebrafish** larva or **zebrafish** comprises subjecting a **zebrafish** larva to **laser irradiation** to cause a uniform vascular wound in the **zebrafish** larva, or exposing a **zebrafish** to water containing **sodium hydroxide** to cause a uniform vascular wound detectable in the gills of the **zebrafish**.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for:

(1) creating a uniform vascular injury in a **zebrafish** larva, comprising subjecting a **zebrafish** larva to **laser irradiation** to cause a reproducible thrombus in a major artery or a major vein of the **zebrafish** larva, where the reproducible thrombus is reversible so that circulation returns at the site of injury, or comprising exposing an adult **zebrafish** to water containing **sodium hydroxide** to cause a reproducible visible hemorrhage in the gills of the **zebrafish**;

(2) measuring coagulation activity in a **zebrafish** blood sample, comprising collecting a **zebrafish** blood sample in a heparinized capillary tube and determining the time required for significant lysis of red cells in the blood sample; (3) analyzing coagulation in **zebrafish**, comprising subjecting a **zebrafish** larva to an amount of **laser irradiation** to cause a uniform vascular wound and measuring the time to coagulation in the wound, exposing a **zebrafish** to water containing an amount of **sodium hydroxide** effective to cause a uniform vascular wound in the gills of the **zebrafish** and measuring the time to coagulation in the wound, or collecting a **zebrafish** blood sample in a heparinized capillary tube and measuring the time required for significant red cell lysis in the sample;

(4) identifying a candidate substance that alters thrombosis, comprising contacting **zebrafish** larvae or **zebrafish** with a candidate substance and determining the ability of the candidate substance to change the coagulation time in **zebrafish** blood, where an ability to change the coagulation time in **zebrafish** blood is measured by creating **laser irradiation** vascular wounds in

zebrafish larvae and measuring the occlusion time in the wounds in the presence and absence of the candidate substance, creating **sodium hydroxide**-induced vascular gill wounds in **zebrafish** and measuring the coagulation time in the wounds in the presence and absence of the candidate substance, or collecting **zebrafish** blood samples in heparinized capillary tubes and measuring the time required for significant red cell lysis in samples from **zebrafish** in the presence and absence of the candidate substance, where a candidate substance that changes the coagulation time is indicative of a candidate substance that alters thrombosis, comprising creating a uniform vascular wound in a **zebrafish** larva using **laser irradiation** and testing a candidate substance for the ability to alter the occlusion time in the wound in comparison to the occlusion time in a wound in a **zebrafish** larva in the absence of the candidate substance, and/or comprising creating a uniform vascular wound detectable in the gills of a **zebrafish** by exposure to **sodium hydroxide** and testing a candidate substance for the ability to alter the coagulation time in the wound in comparison to the coagulation time in a wound in a **zebrafish** in the absence of the candidate substance, and/or comprising collecting in a heparinized capillary tube a blood sample from a **zebrafish** exposed to a candidate substance and determining the red cell lysis time in the blood sample in comparison to the red cell lysis time in a counterpart blood sample collected from a **zebrafish** in the absence of the candidate substance; (5) identifying a gene associated with coagulation, comprising creating a mutant **zebrafish** larvae or **zebrafish**, or **zebrafish** population, comprising a mutation in a gene and determining the effect of the mutation on coagulation time in **zebrafish** blood, where the effect of the mutation on coagulation time in **zebrafish** blood is measured by creating **laser irradiation** vascular wounds in **zebrafish** larvae or plurality of **zebrafish** larvae, and measuring the occlusion time in the wounds in the presence and absence of the mutation, creating **sodium hydroxide** -induced vascular gill wounds in **zebrafish** and measuring the coagulation time in the wounds in the presence and absence of the mutation, or collecting **zebrafish** blood samples in heparinized capillary tubes and measuring the time required for significant red cell lysis in samples from **zebrafish** in the presence and absence of the mutation, where identifying a mutation that changes the coagulation time is indicative of a gene associated with coagulation; and

(6) measuring the clotting activity of a **zebrafish** blood sample, comprising collecting a **zebrafish** blood sample in a heparinized capillary tube, centrifuging the capillary tube to separate red cells from plasma, and determining the time required for significant red cell lysis by measuring the time for a significant red color to develop in the plasma following lysis of the red cells. ACTIVITY - Anticoagulant; Thrombolytic. No biological data given.

MECHANISM OF ACTION - Gene-Therapy.

USE - The methods and compositions of the present invention are useful for screening **zebrafish** to identify anti-thrombotic agents for therapeutic use in humans.

L13 ANSWER 7 OF 15 WPIX COPYRIGHT 2007 THE THOMSON CORP on STN

ACCESSION NUMBER: 2004-593921 [57] WPIX

DOC. NO. CPI: C2004-215996 [57]

DOC. NO. NON-CPI: N2004-469790 [57]

TITLE: Fish model useful for bone disease or for screening a compound useful in treatment of bone, cartilage and/or joint disease or disorder comprises medium containing embryonic fish to induce bone loss in the fish and glucocorticoid

DERWENT CLASS: B04; P14; S03

INVENTOR: FLEMING A L; GOLDSMITH P

PATENT ASSIGNEE: (DANI-N) DANIOLABS LTD; (FLEM-I) FLEMING A L;

(GOLD-I) GOLDSMITH P
COUNTRY COUNT: 107

PATENT INFO ABBR.:

PATENT NO	KIND	DATE	WEEK	LA	PG	MAIN IPC
WO 2004066723	A1	20040812	(200457)*	EN	56[0]	
EP 1587365	A1	20051026	(200570)	EN		
US 20060150259	A1	20060706	(200645)	EN		
JP 2006517407	W	20060727	(200650)	JA	29	

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
WO 2004066723	A1	WO 2004-GB314	20040128
EP 1587365	A1	EP 2004-705851	20040128
EP 1587365	A1	WO 2004-GB314	20040128
US 20060150259	A1	WO 2004-GB314	20040128
US 20060150259	A1	US 2006-544001	20060106
JP 2006517407	W	WO 2004-GB314	20040128
JP 2006517407	W	JP 2006-502199	20040128

FILING DETAILS:

PATENT NO	KIND		PATENT NO	
EP 1587365	A1	Based on	WO 2004066723	A
JP 2006517407	W	Based on	WO 2004066723	A

PRIORITY APPLN. INFO: GB 2003-1977 20030128
AN 2004-593921 [57] WPIX
AB WO 2004066723 A1 UPAB: 20060122
NOVELTY - A fish model (m1) comprises medium containing embryonic fish to induce bone loss in the fish and glucocorticoid.
DETAILED DESCRIPTION - INDEPENDENT CLAIMS are included for following:
(1) a method (m2) for screening a compound useful in treatment of bone, cartilage and/or joint disease or disorder involving: treating (m1) with a compound; and identifying a compound that treats the disease or disorder; and
(2) a method (m3) for screening a genetic suppressor of a disease or disorder of bone, cartilage and/or joint involving: identifying a genetic suppressor in (m1) that suppresses the disease.
USE - As fish model e.g. **zebrafish** for bone disease for screening for a compound which is used in treating a bone, cartilage and joint disease or disorder; for screening genetic suppressor of a disease or disorder of bone, cartilage and/or joint; for screening disease phenotype (claimed); for screening in a high-throughput fashion for treatment which alleviate osteoporosis and other bone and joint diseases or disorders; for screening mutations that affect bone, cartilage disorders, osteoarthritis, fracture healing, kyphoscolioss and other age-related bone changes; for screening test substance which when administered ameliorates symptoms of a disease state; identifying mutation, genotype, allelic variations, haplotypes and genetic profiles associated with responsiveness to a therapeutic; for screening modifiers of subchondral bone biology and cartilage turnover applicable to the disease state of osteoarthritis.
ADVANTAGE - The fish model offers the unique combination of invertebrate scalability and vertebrate modeling capabilities. The model enables development of appropriate genetic assays in humans.

L13 ANSWER 8 OF 15 DISSABS COPYRIGHT (C) 2007 ProQuest Information and Learning Company; All Rights Reserved on STN

ACCESSION NUMBER: 2003:44271 DISSABS Order Number: AAI3076388
TITLE: Genetic analysis of hemostasis and thrombosis using vascular occlusion in **zebrafish**
AUTHOR: Gregory, Michael Joseph [Ph.D.]; Jagadeeswaran, Pudur [advisor]
CORPORATE SOURCE: The University of Texas Health Science Center at San Antonio (0853)
SOURCE: Dissertation Abstracts International, (2003) Vol. 63, No. 12B, p. 5651. Order No.: AAI3076388. 149 pages. ISBN: 0-493-96760-5.
DOCUMENT TYPE: Dissertation
FILE SEGMENT: DAI
LANGUAGE: English

AB Although genetic analysis of individuals prone to thrombosis has identified genetic mutations that correlate with an increased risk of thrombosis, only 50% of the cases of inherited venous thrombophilia can be attributed to one known genetic risk factor (Reitsma, 2001). To further investigate genetic factors affecting thrombosis, animal models have been developed. However, none of the current models has been used in a genetic screen of thrombosis because of cost constraints and lack amenability to large-scale screening. The **zebrafish** presents an excellent alternative genetic model to study vascular occlusion and thrombosis because of its proven relevance to mammalian hemostasis and the feasibility of genetic screens in the **zebrafish** (Driever et al., 1996; Jagadeeswaran & Sheehan, 1999). Here, I present the development of chemical and **laser** methods to induce vascular occlusion in **zebrafish** larvae. Two chemicals, ferric chloride and phenylhydrazine, caused uniformed vascular injury leading to vascular occlusion in the caudal arteries of **zebrafish** larvae. The use of **laser irradiation** to induce vascular injury produced either venous or arterial occlusions. Fluorescent labeling techniques were developed to demonstrate fibrin deposition and thrombocyte adherence at the site of injury induced by these agents. Further investigation demonstrated that both ferric chloride and **laser irradiation** caused a true thrombus formation, whereas phenylhydrazine treatment resulted in an occlusion that involved changes in the properties of erythrocytes. To utilize these methods for identifying naturally occurring mutations affecting thrombosis, clutches of homozygous gynogenetic-diploid larvae were screened from female **zebrafish** for variations in the time to occlusion after vascular injury. Several **zebrafish** were identified as carriers of recessive mutations that significantly prolonged the time to occlusion in their homozygous progeny. To characterize the mutant locus, linkage studies were performed on the progeny from one of these **zebrafish.** Bulk segregant analysis using a panel of 214 microsatellite markers spanning the **zebrafish** genome established association of the prolonged time to occlusion phenotype to a locus, termed victoria, on linkage group 7 of the **zebrafish** genome. This constitutes the first larval genetic screen for thrombosis in the **zebrafish** and this model should prove useful in the determination of novel thrombotic factors.

L13 ANSWER 9 OF 15 MEDLINE on STN DUPLICATE 3

ACCESSION NUMBER: 2003039231 MEDLINE Full-text
DOCUMENT NUMBER: PubMed ID: 12547218
TITLE: Genetic analysis of hemostasis and thrombosis using vascular occlusion.
AUTHOR: Gregory Michael; Hanumanthaiah Ravikumar; Jagadeeswaran

Pudur
CORPORATE SOURCE: Department of Cellular and Structural Biology, University of Texas Health Science Center at San Antonio, 7703 Floyd Curl Drive, San Antonio, TX 78229, USA.
CONTRACT NUMBER: HL 63792 (NHLBI)
SOURCE: Blood cells, molecules & diseases, (2002 Nov-Dec) Vol. 29, No. 3, pp. 286-95.
Journal code: 9509932. ISSN: 1079-9796.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, U.S. GOV'T, P.H.S.)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200311
ENTRY DATE: Entered STN: 28 Jan 2003
Last Updated on STN: 17 Dec 2003
Entered Medline: 19 Nov 2003

AB The **zebrafish** is an excellent model for mammalian hemostasis and thrombosis since it possesses coagulation factors, thrombocyte receptors and responds to anti-coagulant and anti-platelet drugs commonly used in clinical treatment. In this study, exposure of larvae to FeCl(3) or **laser irradiation** produced a vessel injury that caused a visible vascular occlusion as a result of thrombus formation. Using the time to vascular occlusion as an assay, two screening strategies were tested for their utility in identifying novel genes involved in thrombosis. Morpholino knockdown studies of **zebrafish** factor VII showed a prolongation of the time to occlusion of the vessel whereas knockdown of the recently discovered factor VIIi resulted in a shortening of the time. Genetic screening of a population of **zebrafish** identified mutants that showed a prolongation of the time to occlusion. Bulk segregant analysis showed linkage of one mutant to a locus, victoria, on linkage group 7. Thus, the vascular occlusion assay developed in this report measures in vivo thrombus formation and is a powerful tool for identifying novel genes involved in thrombosis.

L13 ANSWER 10 OF 15 MEDLINE on STN DUPLICATE 4
ACCESSION NUMBER: 2000320953 MEDLINE Full-text
DOCUMENT NUMBER: PubMed ID: 10861559
TITLE: Development of utricular otoliths, but not saccular otoliths, is necessary for vestibular function and survival in **zebrafish.**
AUTHOR: Riley B B; Moorman S J
CORPORATE SOURCE: Department of Biology, Texas A & M University, College Station, Texas 77843-3258, USA..
briley@mail.bio.tamu.edu
CONTRACT NUMBER: DC03405-01 (NIDCD)
DC03531 (NIDCD)
SOURCE: Journal of neurobiology, (2000 Jun 15) Vol. 43, No. 4, pp. 329-37.
Journal code: 0213640. ISSN: 0022-3034.
(Investigators: Moorman S J, Case Western U, Cleveland, OH)
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, NON-U.S. GOV'T)
(RESEARCH SUPPORT, U.S. GOV'T, NON-P.H.S.)
(RESEARCH SUPPORT, U.S. GOV'T, P.H.S.)
LANGUAGE: English
FILE SEGMENT: Priority Journals; Space Life Sciences
ENTRY MONTH: 200008

ENTRY DATE: Entered STN: 11 Aug 2000
Last Updated on STN: 21 Mar 2002
Entered Medline: 1 Aug 2000

AB We have been studying the consequences of embryonic vestibular dysfunction caused by the monolith (mnl) mutation in **zebrafish** . mnl is a dominant mutation that specifically inhibits formation of utricular otoliths. However, briefly **immobilizing** mnl/mnl embryos in **agarose** with the otic vesicle orientated at certain angles selectively induces or prevents formation of utricular and/or saccular otoliths. With this noninvasive technique, we generated six phenotypic classes of mnl/mnl mutants, designated S-S, U-U, U-S, S-US, U-US, and US-US, depending on which otoliths are present on each side (U, utricular otolith; S, saccular otolith). All mnl/mnl larvae survived through day 10 of development. Thereafter, S-S larvae showed a rapid decline, probably because of starvation, and none survived to adulthood. Survival rates in all other classes of mnl/mnl larvae (those having at least one utricular otolith) were close to normal. The presence or absence of utricular otoliths also correlated with vestibular function during early larval development, as measured by three criteria: First, unlike wild-type larvae, S-S mutant larvae showed almost no detectable counter-rotation of the eyes when tilted tail up or tail down. Second, 95% of S-S mutant larvae never acquired the ability to maintain a balanced dorsal-up posture. Third, although most wild-type larvae responded to gentle prodding by swimming in a straight line, S-S larvae responded by swimming in rapid circles, showing sudden and frequent changes in direction ("zigzagging"), and/or rolling and spiraling. All other phenotypic classes of mnl/mnl larvae behaved normally in these assays. These data demonstrate that bilateral loss of utricular otoliths disrupts the ability to sense gravity, severely impairs balance and motor coordination, and is invariably lethal. The presence of a utricular otolith in at least one inner ear is necessary and sufficient for vestibular function and survival. In contrast, saccular otoliths are dispensable for these functions.

L13 ANSWER 11 OF 15 DISSABS COPYRIGHT (C) 2007 ProQuest Information and Learning Company; All Rights Reserved on STN

ACCESSION NUMBER: 2000:35216 DISSABS Order Number: AAI9957571
TITLE: Development and death of **zebrafish** Rohon-Beard spinal sensory neurons
AUTHOR: Reyes, Rosario [Ph.D.]; Eisen, Judith S. [adviser]
CORPORATE SOURCE: University of Oregon (0171)
SOURCE: Dissertation Abstracts International, (1999) Vol. 61, No. 1B, p. 47. Order No.: AAI9957571. 69 pages.
DOCUMENT TYPE: Dissertation
FILE SEGMENT: DAI
LANGUAGE: English

AB Rohon-Beard (R-B) cells are large, mechanosensory neurons located in the dorsal spinal cord of anamniote vertebrates. R-B cells appear to die during development and their function is assumed by later-developing dorsal root ganglion (DRG) neurons. In Xenopus laevis and Rana pipiens, their disappearance is gradual and coincides with DRG development, suggesting DRG neurons play a role in R-B cell death. My goals were to determine if **zebrafish** R-B cells die during development and whether DRG neurons trigger R-B cell death. By using a cell death assay and antibodies that recognize R-B cells, I have found that R-B cells die as early as 1 day post fertilization (1d) with most R-B cells dying by 3d. I also observed R-B cells and DRG neurons over time and found early R-B cell death is not due to interactions with DRG neurons since there is no direct contact between these cells at this time. However, by 3d the arbors of R-B cells and DRG neurons can overlap. To determine whether DRG neurons trigger later R-B cell death, I examined the survival of R-B

cells when DRG neurons were ablated by **laser- irradiation**, and I looked at mutants with missing or aberrant DRGs. I found that absence of DRG neurons does not affect survival of R-B cells.
Thus, R-B cell death appears to involve factors other than interactions with DRG neurons. One possibility is the presence and subsequent disappearance of a factor required for R-B cell survival. A candidate factor is thyroid hormone. I found that **zebrafish** eggs and larvae have a supply of maternally deposited thyroid hormones, thyroxine and triiodothyronine, likely deposited in the yolk. Titers of thyroid hormones decline significantly when R-B cells are dying. Furthermore, exogenous application of thyroxine prolongs survival of R-B cells, whereas removal of yolk hastens their demise. Lastly, application of exogenous thyroxine reverses the effect of yolk removal.
These findings show that R-B cells in **zebrafish** are a transient population of sensory cells. And, the deciding factor that triggers the onset of R-B cell death may well be the disappearance of maternal thyroid hormone.

L13 ANSWER 12 OF 15 DISSABS COPYRIGHT (C) 2007 ProQuest Information and Learning Company; All Rights Reserved on STN

ACCESSION NUMBER: 94:33336 DISSABS Order Number: AARC359198 (not available for sale by UMI)
TITLE: MERCURY ACCUMULATION IN ZOOBENTHOS: AN IMPORTANT MECHANISM FOR THE TRANSPORT OF MERCURY FROM SEDIMENT TO FISH
AUTHOR: PARKMAN, ANNA HELENA [FIL.DR]
CORPORATE SOURCE: UPPSALA UNIVERSITET (SWEDEN) (0903)
SOURCE: Dissertation Abstracts International, (1993) Vol. 55, No. 3C, p. 768. Order No.: AARC359198 (not available for sale by UMI). ALMQVIST & WIKSELL INTERNATIONAL, STOCKHOLM, SWEDEN. 42 pages.
ISBN: 91-554-3145-5.
DOCUMENT TYPE: Dissertation
FILE SEGMENT: DAI
LANGUAGE: English
ENTRY DATE: Entered STN: 19940830
Last Updated on STN: 19940830

AB Although mercury (Hg) discharges to the environment decreased dramatically during the 1980s, Hg concentrations in fish from forest lakes continues to increase. Most of the Hg in fish is probably taken up from food. Methyl-Hg (MeHg) is of importance for the biomagnification of Hg in food chains, and methylation of Hg has been ascribed microbial processes in anaerobic sediments. However, the importance of this MeHg source has recently become a controversial question. In this thesis, relations between redox potential (Eh) and MeHg occurrence and production was studied over the redox cline in a stratified fiord. High MeHg concentrations were found and methylation took place under reducing conditions. However, MeHg production was not dependent on presence of microbes.
Zoobenthos constitute an important food source for many fishes. To evaluate the potential of zoobenthos as source for Hg in fish, Hg was measured in zoobenthos from forest lakes. Hg concentrations in zoobenthos were similar in lakes of the same type, and highest in acidic dystrophic lakes. The concentrations were dependent on animal species, and detritivorous chironomid larvae revealed highest concentrations. Sediment conditions highly affect these animals, but their degree of Hg-accumulation was not correlated to total-Hg in sediments.
To evaluate which factors determine Hg-accumulation in detritivores, Chironomus riparius were grown in different types of sediments in

laboratory. Relationships between Hg-accumulation in the chironomids and Hg-partitioning as well as pH and Eh in the sediments were investigated. In the freshwater sediments studied, MeHg usually constituted $< 2% of total Hg and was not the major factor determining bioconcentration of sediment-Hg by chironomids (BCF). In stead the BCFs for the chironomids were best correlated with **NaOH** -extractable Hg ('Hg bound to humic material'). This fraction constituted 10-70% of total Hg in sediments. Experimental increase of Eh or decrease of pH resulted in increased amounts of **NaOH** -extractable Hg in sediments, and a simultaneous increase in bioaccumulation of Hg. Addition of anthropogenic persistent organic compounds (DEHP) also increased the bioavailability of sediment associated Hg.
Experimental studies with **zebrafish** showed that detritivorous chironomids served as an effective Hg-transport link between sediment and fish.

L13 ANSWER 13 OF 15 DISSABS COPYRIGHT (C) 2007 ProQuest Information and Learning Company; All Rights Reserved on STN

ACCESSION NUMBER: 91:18204 DISSABS Order Number: AAR9137369
TITLE: MOTONEURONAL INTERACTIONS DURING PATHFINDING IN EMBRYONIC **ZEBRAFISH** (**ZEBRAFISH**)
AUTHOR: PIKE, SUSAN HORNER [PH.D.]; EISEN, JUDITH S. [advisor]
CORPORATE SOURCE: UNIVERSITY OF OREGON (0171)
SOURCE: Dissertation Abstracts International, (1991) Vol. 52, No. 7B, p. 3457. Order No.: AAR9137369. 120 pages.
DOCUMENT TYPE: Dissertation
FILE SEGMENT: DAI
LANGUAGE: English
ENTRY DATE: Entered STN: 19921118
Last Updated on STN: 19921118

AB A central question of developmental biology is how appropriate neuronal connections are established. Developing neurons extend growth cones to their synaptic targets by a process of precise pathfinding during which they navigate through a complex environment. Growth cones contact a variety of potential sources of guidance information. One of the keys to understanding the mechanisms underlying growth cone guidance involves identifying potential guidance cues. I examined one potential guidance cue, interactions between growth cones and other neurons.
I studied the guidance role of neuronal interactions in two classes of motoneurons, primary motoneurons that pioneer peripheral motor nerves and later-developing secondary motoneuron. First, I examined interactions between primary motoneurons. Second, I examined interactions between primary and secondary motoneurons. Primary motoneurons extend growth cones in a stereotyped temporal sequence, suggesting that interactions between these growth cones might be important for determining pathway selection. To test this idea, I ablated subsets of the primary motoneurons by **laser- irradiation** and observed the effects of these ablations upon pathway selection by the remaining primary motoneuron. My data show that interactions between primary motoneurons are not necessary for appropriate pathway selection. The growth cones of some secondary motoneurons extend along the axons of primary motoneurons. To learn whether interactions with primary motoneurons were important for pathway navigation by growth cones of secondary motoneurons, I ablated primary motoneurons and examined subsequent secondary motoneuron development. I found that the growth cones of secondary motoneurons were able to pioneer the motor nerves in the absence of the primary motoneurons. However, secondary motoneuronal outgrowth was delayed and processes often extended along aberrant

trajectories, suggesting that primary motoneurons are important, but not necessarily required, for pathway navigation by secondary motoneurons. By identifying the cues involved in growth cone guidance and manipulating them, the contributions of these cues to pathway selection can be assessed.

L13 ANSWER 14 OF 15 MEDLINE on STN DUPLICATE 5
ACCESSION NUMBER: 90211969 MEDLINE Full-text
DOCUMENT NUMBER: PubMed ID: 2322459
TITLE: Early axonal contacts during development of an identified dendrite in the brain of the **zebrafish.**
AUTHOR: Kimmel C B; Hatta K; Metcalfe W K
CORPORATE SOURCE: Institute of Neuroscience, University of Oregon, Eugene 97403.
CONTRACT NUMBER: NS17963 (NINDS)
SOURCE: Neuron, (1990 Apr) Vol. 4, No. 4, pp. 535-45.
Journal code: 8809320. ISSN: 0896-6273.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, U.S. GOV'T, P.H.S.)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199005
ENTRY DATE: Entered STN: 22 Jun 1990
Last Updated on STN: 3 Feb 1997
Entered Medline: 23 May 1990

AB We have identified the initial synaptic contacts made onto the Mauthner (M) cell, an identified neuron that arises during early development of the **zebrafish** hindbrain. The contacts are made by a small bundle of pioneering trigeminal sensory axons onto the M cell soma before it forms dendrites. The sensory bundle is then partially enveloped by the M cell. The lateral dendrite appears at about the site of the contact, and eventually the trigeminal inputs are shifted to its trunk. As the dendrite elongates, other sensory contacts are made on its distal regions, sequentially from the acoustico-vestibular nerve and the lateral line nerves. To learn whether the earliest inputs induce the initial outgrowth of the M cell dendrite, we ablated the trigeminal neurons by **laser irradiation** before they contacted the M cell. Morphogenesis of the M cell, including its dendrite, appeared normal.

L13 ANSWER 15 OF 15 MEDLINE on STN DUPLICATE 6
ACCESSION NUMBER: 90132916 MEDLINE Full-text
DOCUMENT NUMBER: PubMed ID: 2299400
TITLE: Identified primary motoneurons in embryonic **zebrafish** select appropriate pathways in the absence of other primary motoneurons.
AUTHOR: Pike S H; Eisen J S
CORPORATE SOURCE: Institute of Neuroscience, University of Oregon, Eugene 97403.
CONTRACT NUMBER: NS23915 (NINDS)
SOURCE: The Journal of neuroscience : the official journal of the Society for Neuroscience, (1990 Jan) Vol. 10, No. 1, pp. 44-9.
Journal code: 8102140. ISSN: 0270-6474.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, NON-U.S. GOV'T)
(RESEARCH SUPPORT, U.S. GOV'T, NON-P.H.S.)

(RESEARCH SUPPORT, U.S. GOV'T, P.H.S.)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199003
ENTRY DATE: Entered STN: 28 Mar 1990
Last Updated on STN: 28 Mar 1990
Entered Medline: 6 Mar 1990

AB Accurate pathfinding is a crucial step in formation of a functional nervous system. Individually identified **zebrafish** primary motoneurons undergo a stereotyped temporal sequence of axonal outgrowth and pathway selection during which their growth cones follow a common pathway to a "choice point" and then select divergent cell-specific pathways that lead to separate muscle territories. The characteristic sequence of cell-specific pathway selection raises the possibility that the sequence of growth cone arrival at the choice point might determine pathway selection. To test this idea, we ablated identified primary motoneurons by **laser irradiation**, labeled the remaining primary motoneuron in the same hemisegment with a fluorescent dye, and followed its development through the end of embryogenesis. We found that the growth cone of each primary motoneuron has an independent ability to pioneer the common pathway and select its appropriate cell-specific pathway, even in the absence of all other primary motoneurons in the same hemisegment.

FILE 'HCAPLUS' ENTERED AT 10:43:40 ON 24 JUL 2007
L14 193 SEA ABB=ON PLU=ON L3 AND (RADIAT? OR IRRADIAT?)
L15 1 SEA ABB=ON PLU=ON L14 AND (L1 OR (NA OR SODIUM)(W)(OH OR HYDROXIDE) OR NAOH)
L16 1 SEA ABB=ON PLU=ON L14 AND (L2 OR AGAROSE OR SEPHAROSE)
L17 0 SEA ABB=ON PLU=ON (L15 OR L16) NOT L8

FILE 'MEDLINE, BIOSIS, EMBASE, WPIX, JAPIO, PASCAL, DISSABS, CABA, AGRICOLA, VETU, VETB' ENTERED AT 10:45:23 ON 24 JUL 2007
L18 1 SEA ABB=ON PLU=ON L15
L19 1 SEA ABB=ON PLU=ON L16
L20 0 SEA ABB=ON PLU=ON (L18 OR L19) NOT L12

(FILE 'HCAPLUS' ENTERED AT 10:47:30 ON 24 JUL 2007)
L21 6203 SEA FILE=HCAPLUS ABB=ON PLU=ON "DANIO RERIO"+OLD/CT
L22 125542 SEA FILE=HCAPLUS ABB=ON PLU=ON "LASER RADIATION"+NT/CT
L23 5 SEA FILE=HCAPLUS ABB=ON PLU=ON L21 AND L22

L1 8 SEA FILE=REGISTRY ABB=ON PLU=ON ("SODIUM HYDROXIDE"/CN OR "SODIUM HYDROXIDE (22NA(OH))"/CN OR "SODIUM HYDROXIDE (24NA(OH))"/CN OR "SODIUM HYDROXIDE (NA(17OH))"/CN OR "SODIUM HYDROXIDE (NA(18OD))"/CN OR "SODIUM HYDROXIDE (NA(18OH))"/CN OR "SODIUM HYDROXIDE (NA(18OT))"/CN OR "SODIUM HYDROXIDE (NA(OD))"/CN)
L21 6203 SEA FILE=HCAPLUS ABB=ON PLU=ON "DANIO RERIO"+OLD/CT
L24 2 SEA FILE=HCAPLUS ABB=ON PLU=ON L21 AND (L1 OR (NA OR SODIUM)(W)(OH OR HYDROXIDE) OR NAOH)

L2 1 SEA FILE=REGISTRY ABB=ON PLU=ON AGAROSE/CN
L21 6203 SEA FILE=HCAPLUS ABB=ON PLU=ON "DANIO RERIO"+OLD/CT
L25 7 SEA FILE=HCAPLUS ABB=ON PLU=ON L21 AND (L2 OR AGAROSE OR SEPHAROSE)

L26 5 S (L23 OR L24 OR L25) NOT L8

L26 ANSWER 1 OF 5 HCAPLUS COPYRIGHT 2007 ACS on STN
ED Entered STN: 29 Jun 2007
ACCESSION NUMBER: 2007:705976 HCAPLUS Full-text
TITLE: Interferor molecule-based protein interference methods, and therapeutic and other uses
INVENTOR(S): Schymkowitz, Joost; Rousseau, Frederic
PATENT ASSIGNEE(S): Vib Vzw, Belg.
SOURCE: PCT Int. Appl., 58pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2007071789	A1	20070628	WO 2006-EP70184	20061222

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW
RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

PRIORITY APPLN. INFO.:		
EP 2005-112761	A	20051222
US 2005-753245P	P	20051222
EP 2006-125189	A	20061201
US 2006-872079P	P	20061201

AB The invention belongs to the field of functional proteomics and more particularly to the field of protein aggregation. The invention discloses a method for interfering with the function of a target protein and uses a non-naturally, user-designed mol., designated as an interferor, that has a specificity for a target protein and which induces aggregation upon contact with the target protein. The invention also discloses such interferor mols. and their use in therapeutic applications, e.g. in the treatment of cancer or pathogen infections. The interferor mols. of the invention can e.g. inhibit the function and/or presence of a protein promoting unwanted cell proliferation or can interfere with the function of a pathogenic protein. The methods of the invention are also suitable for e.g. identification of new pharmacol. agents. Also included is e.g. a method to isolate a protein from a sample.

IT **9012-36-6, Agarose**
RL: BUU (Biological use, unclassified); PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(beads; interferor mol.-based protein interference methods, and therapeutic and other uses)

L26 ANSWER 2 OF 5 HCAPLUS COPYRIGHT 2007 ACS on STN
ED Entered STN: 29 Oct 2006
ACCESSION NUMBER: 2006:1127461 HCAPLUS Full-text
DOCUMENT NUMBER: 146:56378

TITLE: FGF19 is a target for FOXC1 regulation in ciliary body-derived cells
AUTHOR(S): Tamimi, Yahya; Skarie, Jonathan M.; Footz, Tim; Berry, Fred B.; Link, Brian A.; Walter, Michael A.
CORPORATE SOURCE: Department of Medical Genetics, Univ. of Alberta, Edmonton, AB, T6G 2H7, Can.
SOURCE: Human Molecular Genetics (2006), 15(21), 3229-3240
CODEN: HMGEE5; ISSN: 0964-6906
PUBLISHER: Oxford University Press
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The forkhead C1 (FOXC1) transcription factor is involved in the development and regulation of several organs, including the eye, where FOXC1 alterations cause iris, trabecular meshwork and corneal anomalies. Using nickel **agarose** chromatin enrichment with human anterior segment cells, we previously identified the fibroblast growth factor 19 (FGF19) locus as a gene potentially regulated by FOXC1. Here, we demonstrate that FGF19 is a direct target of FOXC1 in the eye. FOXC1 pos. regulates FGF19 expression in corneal and periocular mesenchymal cells in cell culture and in zebrafish embryos. Through the FGFR4 tyrosine kinase, FGF19 promotes MAPK phosphorylation in the developing and mature cornea. During development, loss of either FOXC1 or FGF19 results in complementary, but distinct, anterior segment dysgeneses. This study reveals an important role for FOXC1 in the direct regulation of the FGF19-FGFR4-MAPK pathway to promote both the development and maintenance of anterior segment structures within the eye.

REFERENCE COUNT: 45 THERE ARE 45 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L26 ANSWER 3 OF 5 HCAPLUS COPYRIGHT 2007 ACS on STN
ED Entered STN: 21 Oct 1998
ACCESSION NUMBER: 1998:663941 HCAPLUS Full-text
DOCUMENT NUMBER: 130:35311
TITLE: **Agarose**-embedded tissue arrays for histologic and genetic analysis
AUTHOR(S): Tsao-Wu, Gladys S.; Weber, Clifford H.; Budgeon, Lynn R.; Cheng, Keith C.
CORPORATE SOURCE: College of Medicine, Pennsylvania Stat University, Hershey, PA, USA
SOURCE: BioTechniques (1998), 25(4), 614-616, 618
CODEN: BTNQDO; ISSN: 0736-6205
PUBLISHER: Eaton Publishing Co.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB To facilitate the histol. anal. of large nos. of 7-day-old zebrafish (Danio rerio), a method has been developed to process them in **agarose**-embedded arrays. Using thin tissue sections, the morphol. of cells and tissues can be examined microscopically to investigate a variety of biol. processes. Because of their small size, precise arrangement of the larvae is necessary to section them simultaneously. A technique was designed to embed groups of zebrafish larvae in a single plane in **agarose** before sectioning. Stained tissue sections of thousands of larvae can be examined efficiently using this embedding method. In addition to histol. anal., PCR-based genotypic anal. of DNA from individual larval sections is also possible. This technique can be modified to accommodate any study that requires the histol. examination of many pieces of tissue.

IT **9012-36-6, Agarose**
RL: BSU (Biological study, unclassified); BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(process to embed arrays of zebrafish larvae in **agarose**

before sectioning for histol. and genetic anal.)
REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L26 ANSWER 4 OF 5 HCAPLUS COPYRIGHT 2007 ACS on STN
ED Entered STN: 12 Dec 1997
ACCESSION NUMBER: 1997:773837 HCAPLUS Full-text
DOCUMENT NUMBER: 128:30806
TITLE: A polymorphic zebrafish line for genetic mapping using SSLPs on high-percentage **agarose** gels
AUTHOR(S): Rauch, Gerd-Jorg; Granato, Michael; Haffter, Pascal
CORPORATE SOURCE: Max-Planck-Inst. Entwicklungsbiol., Tubingen, 72076, Germany
SOURCE: Technical Tips Online [Electronic Publication] (1997) No pp. Given
CODEN: TTONFG
URL: http://tto.trends.com/cgi-bin/tto/pr.pg_art.cgi?sid=CAT1&ac=t01208|/cgi-bin/tto/pr/pg_cat.cgi?cc=CAT1
PUBLISHER: Elsevier Trends Journals
DOCUMENT TYPE: Journal; (online computer file)
LANGUAGE: English
AB Simple sequence length polymorphisms (SSLPs) have become an important and powerful genetic tool in constructing linkage maps of various organisms. A newly constructed SSLP map demonstrates that SSLP are highly polymorphic, codominant and abundant in zebrafish. We established a new laboratory line of zebrafish for genetic mapping termed, WIK. From this line, which derives from a wild catch in India, we gained several sublines from single-pair matings, and one one of these sublines, WIK11 was free of embryonic and larval lethals with a probability of over 90%. To test whether WIK11 is a suitable reference line for genetic mapping using SSLPs, we analyzed four individual fish from the cell lines Tu and WIK11, using randomly chosen SSLP primer pairs. We conclude that the newly established WIK11 line is very well suited as a reference for mapping mutations induced in the Tu line. In combination with anal. of PCR products on high-resolution **agarose** gels, this method should allow simple and efficient mapping of all mutants identified in the Tubingen screen.

L26 ANSWER 5 OF 5 HCAPLUS COPYRIGHT 2007 ACS on STN
ED Entered STN: 26 Jul 1992
ACCESSION NUMBER: 1992:421344 HCAPLUS Full-text
DOCUMENT NUMBER: 117:21344
TITLE: Characterization of AluI repeats of zebrafish (Brachydanio rerio)
AUTHOR(S): He, Ling; Zhu, Zuoyan; Faras, Anthony J.; Guise, Kevin S.; Hackett, Perry B.; Kapuscinski, Anne R.
CORPORATE SOURCE: Dep. Fish. Wildl., Univ. Minnesota, St Paul, MN, 55108, USA
SOURCE: Molecular Marine Biology and Biotechnology (1992), 1(2), 125-35
CODEN: MMBBEQ; ISSN: 1053-6426
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Two families of repetitive DNA sequences were isolated from the zebrafish genome and characterized. Eight different sequences were sequenced and classified by two stds., their (G + C) composition and their lengths. For

convenience, the sequences were first divided into two types. Type I was (A + T)-rich, was repeated approx. 500,000 times, and constituted approx. 5% of the zebrafish genome. Type II was (G + C)-rich, was reiterated approx. 90,000 times, and comprised approx. 0.5% of the genome. **Agarose** gel electrophoresis of zebrafish DNA cleaved with AluI revealed three distinguishable bands of repetitive fragments: large (approx. 180 bp, designated RFAL), medium (approx. 140 bp, RFAM), and small (approx. 90 bp, RFAS). The RFAL fragments contained both type I and type II sequences. Limited digestion of genomic DNA indicated that RFAL and RFAM were tandemly arranged in the genome, whereas TFAS showed a mixed pattern of both tandem and interspersed repeated arrangements. Although inclusion of a repetitive sequence in a transgenic construct did not appreciably accelerate homologous integration of transgenes into the zebrafish genome, the AluI sequences could facilitate transgene mapping following chromosomal integration.

(FILE 'MEDLINE, BIOSIS, EMBASE, WPIX, JAPIO, PASCAL, DISSABS, CABA, AGRICOLA, VETU, VETB' ENTERED AT 10:50:21 ON 24 JUL 2007)

```
L27             0 S L23
L28             0 S L24
L29             0 S L25

FILE 'MEDLINE' ENTERED AT 10:50:50 ON 24 JUL 2007

 FILE LAST UPDATED: 21 Jul 2007 (20070721/UP). FILE COVERS 1950 TO DATE.

  This file contains CAS Registry Numbers for easy and accurate
  substance identification.

L30          5923 SEA FILE=MEDLINE ABB=ON  PLU=ON  (ZEBRAFISH/CT OR B1.150.90
                  0.493.200.244.828./CT)
L31          1029 SEA FILE=MEDLINE ABB=ON  PLU=ON  ("LASER THERAPY, LOW-LEVEL
                  "/CT OR E2.774.500./CT)
L32             0 SEA FILE=MEDLINE ABB=ON  PLU=ON  L30 AND L31


L30          5923 SEA FILE=MEDLINE ABB=ON  PLU=ON  (ZEBRAFISH/CT OR B1.150.90
                  0.493.200.244.828./CT)
L33          2842 SEA FILE=MEDLINE ABB=ON  PLU=ON  ("SODIUM HYDROXIDE"/CT OR
                  D1.45.250.750./CT OR D1.455.824./CT OR D1.857.745./CT)
L34             0 SEA FILE=MEDLINE ABB=ON  PLU=ON  L30 AND L33


L30          5923 SEA FILE=MEDLINE ABB=ON  PLU=ON  (ZEBRAFISH/CT OR B1.150.90
                  0.493.200.244.828./CT)
L35          5258 SEA FILE=MEDLINE ABB=ON  PLU=ON  (SEPHAROSE/CT OR D9.698.81
                  3./CT)
L36             5 SEA FILE=MEDLINE ABB=ON  PLU=ON  L30 AND L35
L37        400785 SEA FILE=MEDLINE ABB=ON  PLU=ON  (MUTATION/CT OR G13.920.59
                  0./CT)
L38        122516 SEA FILE=MEDLINE ABB=ON  PLU=ON  (MUTAGENESIS/CT OR
                  G5.600./CT)
L39        103835 SEA FILE=MEDLINE ABB=ON  PLU=ON  ("POLYMORPHISM, GENETIC"/C
                  T OR G13.920.795./CT)
L40             0 SEA FILE=MEDLINE ABB=ON  PLU=ON  L36 AND (L37 OR L38 OR
                  L39)


L30          5923 SEA FILE=MEDLINE ABB=ON  PLU=ON  (ZEBRAFISH/CT OR B1.150.90
                  0.493.200.244.828./CT)
L37        400785 SEA FILE=MEDLINE ABB=ON  PLU=ON  (MUTATION/CT OR G13.920.59
```

0./CT)
L38 122516 SEA FILE=MEDLINE ABB=ON PLU=ON (MUTAGENESIS/CT OR G5.600./CT)
L39 103835 SEA FILE=MEDLINE ABB=ON PLU=ON ("POLYMORPHISM, GENETIC"/CT OR G13.920.795./CT)
L41 1357 SEA FILE=MEDLINE ABB=ON PLU=ON L30 AND (L37 OR L38 OR L39)
L42 154033 SEA FILE=MEDLINE ABB=ON PLU=ON (VEINS/CT OR A7.231.908./CT)
L43 306228 SEA FILE=MEDLINE ABB=ON PLU=ON (ARTERIES/CT OR A7.231.114./CT)
L44 10 SEA FILE=MEDLINE ABB=ON PLU=ON L41 AND (L42 OR L43)

L44 ANSWER 1 OF 10 MEDLINE on STN
ED Entered STN: 14 Sep 2006
Last Updated on STN: 19 Dec 2006
Entered Medline: 28 Nov 2006
ACCESSION NUMBER: 2006543617 MEDLINE Full-text
DOCUMENT NUMBER: PubMed ID: 16968815
TITLE: Arteries define the position of the thyroid gland during its developmental relocalisation.
AUTHOR: Alt Burkhard; Elsalini Osama A; Schrumpf Pamela; Haufs Nele; Lawson Nathan D; Schwabe Georg C; Mundlos Stefan; Gruters Annette; Krude Heiko; Rohr Klaus B
CORPORATE SOURCE: Institute for Developmental Biology, University of Cologne, Gyrhofstrasse 17, Koln, Germany.
SOURCE: Development (Cambridge, England), (2006 Oct) Vol. 133, No. 19, pp. 3797-804.
Journal code: 8701744. ISSN: 0950-1991.
PUB. COUNTRY: England: United Kingdom
DOCUMENT TYPE: (COMPARATIVE STUDY)
Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, NON-U.S. GOV'T)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200611
ENTRY DATE: Entered STN: 14 Sep 2006
Last Updated on STN: 19 Dec 2006
Entered Medline: 28 Nov 2006

AB During vertebrate development, the thyroid gland undergoes a unique relocalisation from its site of induction to a distant species-specific position in the cervical mesenchyme. We have analysed thyroid morphogenesis in wild-type and mutant zebrafish and mice, and find that localisation of growing thyroid tissue along the anteroposterior axis in zebrafish is linked to the development of the ventral aorta. In grafting experiments, ectopic vascular cells influence the localisation of thyroid tissue cell non-autonomously, showing that vessels provide guidance cues in zebrafish thyroid morphogenesis. In mouse thyroid development, the midline primordium bifurcates and two lobes relocalise cranially along the bilateral pair of carotid arteries. In hedgehog-deficient mice, thyroid tissue always develops along the ectopically and asymmetrically positioned carotid arteries, suggesting that, in mice (as in zebrafish), co-developing major arteries define the position of the thyroid. The similarity between zebrafish and mouse mutant phenotypes further indicates that thyroid relocalisation involves two morphogenetic phases, and that variation in the second phase accounts for species-specific differences in thyroid morphology. Moreover, the involvement of vessels in thyroid relocalisation sheds new light on the interpretation of congenital thyroid defects in humans.

L44 ANSWER 2 OF 10 MEDLINE on STN
ED Entered STN: 8 Jul 2006
Last Updated on STN: 12 Sep 2006
Entered Medline: 11 Sep 2006

ACCESSION NUMBER: 2006404572 MEDLINE Full-text
DOCUMENT NUMBER: PubMed ID: 16824925
TITLE: Artery/vein specification is governed by opposing phosphatidylinositol-3 kinase and MAP kinase/ERK signaling.
AUTHOR: Hong Charles C; Peterson Quinn P; Hong Ji-Young; Peterson Randall T
CORPORATE SOURCE: Developmental Biology Laboratory, Cardiovascular Research Center, Massachusetts General Hospital, Charlestown, Massachusetts 02129, and Department of Medicine, Harvard Medical School, Boston, Massachusetts 02115, USA.
CONTRACT NUMBER: HL079267 (NHLBI)
K08 HL081535-01 (NHLBI)
K08 HL081535-02 (NHLBI)
K08 HL081535-03 (NHLBI)
SOURCE: Current biology : CB, (2006 Jul 11) Vol. 16, No. 13, pp. 1366-72.
Journal code: 9107782. ISSN: 0960-9822.
PUB. COUNTRY: England: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, N.I.H., EXTRAMURAL)
(RESEARCH SUPPORT, NON-U.S. GOV'T)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200609
ENTRY DATE: Entered STN: 8 Jul 2006
Last Updated on STN: 12 Sep 2006
Entered Medline: 11 Sep 2006

AB Angioblasts are multipotent progenitor cells that give rise to arteries or veins . Genetic disruption of the gridlock gene perturbs the artery/vein balance, resulting in generation of insufficient numbers of arterial cells . However, within angioblasts the precise biochemical signals that determine the artery/vein cell-fate decision are poorly understood. We have identified by chemical screening two classes of compounds that compensate for a mutation in the gridlock gene . Both target the VEGF signaling pathway and reveal two downstream branches emanating from the VEGF receptor with opposing effects on arterial specification. We show that activation of ERK (p42/44 MAP kinase) is a specific marker of early arterial progenitors and is among the earliest known determinants of arterial specification. In embryos, cells fated to contribute to arteries express high levels of activated ERK, whereas cells fated to contribute to veins do not. Inhibiting the phosphatidylinositol-3 kinase (PI3K) branch with GS4898 or known PI3K inhibitors, or by expression of a dominant-negative form of AKT promotes arterial specification. Conversely, inhibition of the ERK branch blocks arterial specification, and expression of constitutively active AKT promotes venous specification. In summary, chemical genetic analysis has uncovered unanticipated opposing roles of PI3K and ERK in artery/vein specification.

L44 ANSWER 3 OF 10 MEDLINE on STN
ED Entered STN: 6 Oct 2005
Last Updated on STN: 15 Dec 2005
Entered Medline: 28 Nov 2005

ACCESSION NUMBER: 2005529252 MEDLINE Full-text
DOCUMENT NUMBER: PubMed ID: 16166372

TITLE: Hematopoietic stem cell fate is established by the Notch-Runx pathway.
AUTHOR: Burns Caroline Erter; Traver David; Mayhall Elizabeth; Shepard Jennifer L; Zon Leonard I
CORPORATE SOURCE: Stem Cell Program and Division of Hematology/Oncology Children's Hospital and Dana Farber Cancer Institute, Howard Hughes Medical Institute, Harvard Stem Cell Institute, Harvard Medical School, Boston, Massachusetts 02115, USA.
CONTRACT NUMBER: 1 K01 DK067179-01 A1 (NIDDK)
5 R01 HL48801-13 (NHLBI)
SOURCE: Genes & development, (2005 Oct 1) Vol. 19, No. 19, pp. 2331-42. Electronic Publication: 2005-09-15.
Journal code: 8711660. ISSN: 0890-9369.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, N.I.H., EXTRAMURAL)
(RESEARCH SUPPORT, NON-U.S. GOV'T)
(RESEARCH SUPPORT, U.S. GOV'T, P.H.S.)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200511
ENTRY DATE: Entered STN: 6 Oct 2005
Last Updated on STN: 15 Dec 2005
Entered Medline: 28 Nov 2005

AB Identifying the molecular pathways regulating hematopoietic stem cell (HSC) specification, self-renewal, and expansion remains a fundamental goal of both basic and clinical biology. Here, we analyzed the effects of Notch signaling on HSC number during zebrafish development and adulthood, defining a critical pathway for stem cell specification. The Notch signaling mutant mind bomb displays normal embryonic hematopoiesis but fails to specify adult HSCs. Surprisingly, transient Notch activation during embryogenesis via an inducible transgenic system led to a Runx1-dependent expansion of HSCs in the aorta-gonad-mesonephros (AGM) region. In irradiated adults, Notch activity induced runx1 gene expression and increased multilineage hematopoietic precursor cells approximately threefold in the marrow. This increase was followed by the accelerated recovery of all the mature blood cell lineages. These data define the Notch-Runx pathway as critical for the developmental specification of HSC fate and the subsequent homeostasis of HSC number, thus providing a mechanism for amplifying stem cells in vivo.

L44 ANSWER 4 OF 10 MEDLINE on STN
ED Entered STN: 12 Aug 2003
Last Updated on STN: 11 Oct 2003
Entered Medline: 10 Oct 2003
ACCESSION NUMBER: 2003375029 MEDLINE Full-text
DOCUMENT NUMBER: PubMed ID: 12909350
TITLE: Expression of a novel type I keratin, DAPK-1 in the dorsal aorta and pronephric duct of the zebrafish embryos.
AUTHOR: Jang Woo S; Kim Eun J; Ro Hyunju; Kim Kyoon E; Huh Tae L; Kim Cheol-Hee; Rhee Myungchull
CORPORATE SOURCE: Department of Biology, College of Natural Sciences Chungnam National University, Daejeon 305-764, South Korea.
SOURCE: Gene, (2003 Jul 17) Vol. 312, pp. 145-50.
Journal code: 7706761. ISSN: 0378-1119.
PUB. COUNTRY: Netherlands
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)

(RESEARCH SUPPORT, NON-U.S. GOV'T)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200310
ENTRY DATE: Entered STN: 12 Aug 2003
Last Updated on STN: 11 Oct 2003
Entered Medline: 10 Oct 2003

AB We isolated a novel cytokeratin gene of zebrafish (Danio rerio), DAPK-1 closely related to other vertebrate type I cytokeratin genes. Zygotic transcription starts at the sphere stage. After the mid-blastula stage, DAPK-1 is expressed in all surface cells, notably in those of the outer enveloping layer. DAPK-1 messages are also present specifically during the segmentation, pharyngula, and hatching periods. In particular, after 24 h post-fertilization, its expression is restricted to the developing eye region, otic vesicle, pectoral fin, dorsal aorta, and pronephric duct. In the mindbomb mutant embryo that has defects in the dorsal aorta development, DAPK-1 transcripts are not detected in the dorsal aorta and pronephric duct. The characteristic expression pattern of DAPK-1 may facilitate more detailed studies related to the morphogenesis of dorsal aorta and pronephric duct.

L44 ANSWER 5 OF 10 MEDLINE on STN
ED Entered STN: 8 Oct 2001
Last Updated on STN: 22 Jan 2002
Entered Medline: 4 Dec 2001
ACCESSION NUMBER: 2001538907 MEDLINE Full-text
DOCUMENT NUMBER: PubMed ID: 11585794
TITLE: Notch signaling is required for arterial-venous differentiation during embryonic vascular development.
AUTHOR: Lawson N D; Scheer N; Pham V N; Kim C H; Chitnis A B; Campos-Ortega J A; Weinstein B M
CORPORATE SOURCE: Laboratory of Molecular Genetics, NICHD, NIH, Bethesda, MD 20892, USA.
CONTRACT NUMBER: ZO1 HD 01011 (NICHD)
SOURCE: Development (Cambridge, England), (2001 Oct) Vol. 128, No. 19, pp. 3675-83.
Journal code: 8701744. ISSN: 0950-1991.
PUB. COUNTRY: England: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, NON-U.S. GOV'T)
(RESEARCH SUPPORT, U.S. GOV'T, P.H.S.)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200112
ENTRY DATE: Entered STN: 8 Oct 2001
Last Updated on STN: 22 Jan 2002
Entered Medline: 4 Dec 2001

AB Recent evidence indicates that acquisition of artery or vein identity during vascular development is governed, in part, by genetic mechanisms. The artery-specific expression of a number of Notch signaling genes in mouse and zebrafish suggests that this pathway may play a role in arterial-venous cell fate determination during vascular development. We show that loss of Notch signaling in zebrafish embryos leads to molecular defects in arterial-venous differentiation, including loss of artery-specific markers and ectopic expression of venous markers within the dorsal aorta. Conversely, we find that ectopic activation of Notch signaling leads to repression of venous cell fate. Finally, embryos lacking Notch function exhibit defects in blood vessel formation similar to those associated with improper arterial-venous specification. Our results suggest that Notch signaling is required for the proper development of arterial and venous blood vessels, and that a major role

of Notch signaling in blood vessels is to repress venous differentiation within developing arteries. Movies available on-line

L44 ANSWER 6 OF 10 MEDLINE on STN
ED Entered STN: 13 Apr 2000
Last Updated on STN: 13 Apr 2000
Entered Medline: 3 Apr 2000
ACCESSION NUMBER: 2000175757 MEDLINE Full-text
DOCUMENT NUMBER: PubMed ID: 10710309
TITLE: gridlock, an HLH gene required for assembly of the aorta in zebrafish.
AUTHOR: Zhong T P; Rosenberg M; Mohideen M A; Weinstein B; Fishman M C
CORPORATE SOURCE: Cardiovascular Research Center, Massachusetts General Hospital-Harvard Medical School, 149 13th Street, 4th floor, Charlestown, MA 02129, USA.
CONTRACT NUMBER: R01DK55383 (NIDDK)
R01RR0888 (NCRR)
T32HL07208 (NHLBI)
+
SOURCE: Science (New York, N.Y.), (2000 Mar 10) Vol. 287, No. 5459, pp. 1820-4.
Journal code: 0404511. ISSN: 0036-8075.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, NON-U.S. GOV'T)
(RESEARCH SUPPORT, U.S. GOV'T, P.H.S.)
LANGUAGE: English
FILE SEGMENT: Priority Journals
OTHER SOURCE: GENBANK-AF237948; GENBANK-AF237949
ENTRY MONTH: 200004
ENTRY DATE: Entered STN: 13 Apr 2000
Last Updated on STN: 13 Apr 2000
Entered Medline: 3 Apr 2000
AB The first artery and vein of the vertebrate embryo assemble in the trunk by migration and coalescence of angioblasts to form endothelial tubes. The gridlock (grl) mutation in zebrafish selectively perturbs assembly of the artery (the aorta). Here it is shown that grl encodes a basic helix-loop-helix (bHLH) protein belonging to the Hairy/Enhancer of the split family of bHLH proteins. The grl gene is expressed in lateral plate mesoderm before vessel formation, and thereafter in the aorta and not in the vein. These results suggest that the arterial endothelial identity is established even before the onset of blood flow and implicate the grl gene in assignment of vessel-specific cell fate.

L44 ANSWER 7 OF 10 MEDLINE on STN
ED Entered STN: 27 Aug 1999
Last Updated on STN: 27 Aug 1999
Entered Medline: 18 Aug 1999
ACCESSION NUMBER: 1999270577 MEDLINE Full-text
DOCUMENT NUMBER: PubMed ID: 10340752
TITLE: What guides early embryonic blood vessel formation?.
AUTHOR: Weinstein B M
CORPORATE SOURCE: Laboratory of Molecular Genetics, National Institute of Child Health and Human Development, National Institutes of Health, Bethesda, Maryland 20892, USA.
CONTRACT NUMBER: ZO1-HD01011-02 (NICHD)
SOURCE: Developmental dynamics : an official publication of the

American Association of Anatomists, (1999 May) Vol. 215, No. 1, pp. 2-11. Ref: 46
Journal code: 9201927. ISSN: 1058-8388.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, U.S. GOV'T, P.H.S.)
General Review; (REVIEW)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199908
ENTRY DATE: Entered STN: 27 Aug 1999
Last Updated on STN: 27 Aug 1999
Entered Medline: 18 Aug 1999

AB Survival of vertebrate embryos depends on their ability to assemble a correctly patterned, integrated network of blood vessels to supply oxygen and nutrients to developing tissues. The arrangement of larger caliber intraembryonic vessels, specification of arterial-venous identity, and proper placement of major branch points and arterial-venous connections are all precisely determined. A number of recent studies in both mammalian and nonmammalian vertebrate species, reviewed here, have now begun to reveal the major role played by genetically predetermined extrinsic cues in guiding the formation of early embryonic blood vessels and determining the global pattern of the vasculature.

L44 ANSWER 8 OF 10 MEDLINE on STN
ED Entered STN: 4 May 1999
Last Updated on STN: 4 May 1999
Entered Medline: 20 Apr 1999
ACCESSION NUMBER: 1999162188 MEDLINE Full-text
DOCUMENT NUMBER: PubMed ID: 10053000
TITLE: The molecular basis of vascular disorders.
AUTHOR: Towbin J A; Casey B; Belmont J
CORPORATE SOURCE: Baylor College of Medicine, Department of Pediatric Cardiology, One Baylor Plaza, Houston, Texas 77030, USA. jtowbin@bcm.tmc.edu
SOURCE: American journal of human genetics, (1999 Mar) Vol. 64, No. 3, pp. 678-84. Ref: 31
Journal code: 0370475. ISSN: 0002-9297.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
General Review; (REVIEW)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199904
ENTRY DATE: Entered STN: 4 May 1999
Last Updated on STN: 4 May 1999
Entered Medline: 20 Apr 1999

L44 ANSWER 9 OF 10 MEDLINE on STN
ED Entered STN: 6 May 1997
Last Updated on STN: 3 Mar 2000
Entered Medline: 21 Apr 1997
ACCESSION NUMBER: 97236934 MEDLINE Full-text
DOCUMENT NUMBER: PubMed ID: 9119113
TITLE: Vessel patterning in the embryo of the zebrafish: guidance by notochord.
AUTHOR: Fouquet B; Weinstein B M; Serluca F C; Fishman M C
CORPORATE SOURCE: Cardiovascular Research Center, Massachusetts General Hospital, Charlestown 02129, USA.

CONTRACT NUMBER: R01-HL49579 (NHLBI)
T32-HL07208 (NHLBI)
SOURCE: Developmental biology, (1997 Mar 1) Vol. 183, No. 1, pp. 37-48.
Journal code: 0372762. ISSN: 0012-1606.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, NON-U.S. GOV'T)
(RESEARCH SUPPORT, U.S. GOV'T, P.H.S.)
LANGUAGE: English
FILE SEGMENT: Priority Journals
OTHER SOURCE: GENBANK-U82383
ENTRY MONTH: 199704
ENTRY DATE: Entered STN: 6 May 1997
Last Updated on STN: 3 Mar 2000
Entered Medline: 21 Apr 1997

AB We have cloned the zebrafish homolog of the receptor tyrosine kinase flk-1 to provide us with a tool to study normal vascular pattern formation in the developing zebrafish embryo and to compare it to mutants in which vascular pattern is perturbed. We find that during normal development the first angioblasts arise laterally in the mesoderm and then migrate medially to form the primordia of the large axial vessels, the dorsal aorta (axial artery) and the axial vein. Lumen formation occurs shortly before onset of circulation at 24 hr postfertilization. We examined the specification of vascular progenitors in the mutant cloche, which fails to form both vessels and blood. cloche lacks all flk-expressing cells and therefore appears to lack angioblasts. The axial vessels of the trunk form in close proximity to notochord and endoderm, which may provide cues for their formation. The dorsal aorta is normally just ventral to the notochord; the axial vein is just below the dorsal aorta and above the endoderm. floating head (flh) and no tail (ntl) mutants both have defects in the formation of notochord. Both are cell-autonomous lesions, flh abolishing notochord and ntl preventing its differentiation. In both mutants the dorsal aorta fails to form, while formation of the axial vein is less affected. Mosaic analysis of mutant embryos shows that transplanted wild-type cells can become notochord in mutant flh embryos. In these mosaic embryos flh cells expressing flk assemble at the midline, beneath the wild-type notochord, and form an aortic primordium. This suggests that signals from the notochord may guide angioblasts in the fashioning of the dorsal aorta. The notochord seems to be less important for the formation of the vein.

L44 ANSWER 10 OF 10 MEDLINE on STN
ED Entered STN: 24 Jan 1996
Last Updated on STN: 24 Jan 1996
Entered Medline: 28 Dec 1995
ACCESSION NUMBER: 96071668 MEDLINE Full-text
DOCUMENT NUMBER: PubMed ID: 7584985
TITLE: Gridlock, a localized heritable vascular patterning defect in the zebrafish.
AUTHOR: Weinstein B M; Stemple D L; Driever W; Fishman M C
CORPORATE SOURCE: Cardiovascular Research Center, Massachusetts General Hospital, Charlestown 02129, USA.
CONTRACT NUMBER: R01-HD29761 (NICHD)
R01-HL49579 (NHLBI)
T32-HL07208 (NHLBI)
SOURCE: Nature medicine, (1995 Nov) Vol. 1, No. 11, pp. 1143-7.
Journal code: 9502015. ISSN: 1078-8956.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)

(RESEARCH SUPPORT, NON-U.S. GOV'T)
(RESEARCH SUPPORT, U.S. GOV'T, P.H.S.)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199512
ENTRY DATE: Entered STN: 24 Jan 1996
Last Updated on STN: 24 Jan 1996
Entered Medline: 28 Dec 1995

AB We are using the zebrafish, Danio rerio, to identify genes that generate and pattern the vertebrate vasculature. We have isolated a recessive mutation, gridlockm145 (grlm145) in which blood flow to the tail is impeded by a localized vascular defect. Using a novel microangiographic method, we show that the blockade is in the anterior trunk, where the paired lateral dorsal aortae normally merge to form the single midline aorta. Arterial-venous shunts and collateral vessels develop in most mutant embryos, bypassing the lesion and reconstituting caudal blood flow. The grl defect resembles coarctation of the aorta, a human congenital cardiovascular malformation of unknown aetiology, in the location of the lesion and its consequences and in the mutants' dependence on collateral vessels for survival.

(FILE 'HCAPLUS, MEDLINE, BIOSIS, EMBASE, WPIX, JAPIO, PASCAL, DISSABS, CABA, AGRICOLA, VETU, VETB' ENTERED AT 10:58:18 ON 24 JUL 2007)
L45 90 S ("JAGADEESWARAN P"? OR "PUDUR J"?)/AU AND L3
L46 15 S L45 AND (RADIAT? OR IRRADIAT?)
L47 6 DUP REM L46 (9 DUPLICATES REMOVED)

L47 ANSWER 1 OF 6 MEDLINE on STN DUPLICATE 1
ACCESSION NUMBER: 2006574161 MEDLINE Full-text
DOCUMENT NUMBER: PubMed ID: 17003448
TITLE: The **Zebrafish** fade out mutant: a novel genetic model for Hermansky-Pudlak syndrome.
AUTHOR: Bahadori Ronja; Rinner Oliver; Schonthaler Helia Berrit; Biehlmaier Oliver; Makhankov Yuri V; Rao Prashanth; **Jagadeeswaran Pudur**; Neuhauss Stephan C F
CORPORATE SOURCE: Swiss Federal Institute of Technology (ETH), Department of Biology, and Brain Research Institute, University of Zurich, Zurich, Switzerland.
SOURCE: Investigative ophthalmology & visual science, (2006 Oct) Vol. 47, No. 10, pp. 4523-31.
Journal code: 7703701. ISSN: 0146-0404.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, NON-U.S. GOV'T)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200610
ENTRY DATE: Entered STN: 28 Sep 2006
Last Updated on STN: 25 Oct 2006
Entered Medline: 24 Oct 2006

AB PURPOSE: To characterize retinal morphology and visual system function in the **zebrafish** mutant fade out (fad) and to establish the mutant as a lower vertebrate model for Hermansky-Pudlak syndrome (HPS). METHODS: Retinal morphology of fad larvae was examined between 3 and 9 days postfertilization (dpf) by standard histology, transmission electron microscopy, and immunohistochemistry examination. Apoptotic cells were visualized by TdT-mediated dUTP nick-end labeling (TUNEL) staining. Visual system function was probed by electroretinography and behavioral assessment by optokinetic response measurements. Blood clotting was evaluated by time to occlusion testing of blood vessels as an arterial thrombosis assay. The chromosomal

location of fad was determined by simple sequence-length polymorphism mapping. Genomic fragments of candidate genes were cloned by standard molecular techniques and mapped to the **zebrafish** genome by **radiation** hybrid mapping. RESULTS: Mutant fad larvae are hypopigmented and show structural defects in the outer retina. Melanosomes of these larvae in the retinal pigment epithelium are hypopigmented, generally smaller, and progressively reduced in number compared to nonmutant larvae. Progressive microvilli protrusions into the photoreceptor cell layer are not detectable, and photoreceptor outer segments get shorter and are misaligned. Photoreceptors subsequently undergo apoptosis, with a peak of cell death at 6 dpf. Electrical responses of the retina and visual performance are severely reduced. Blood clotting is prolonged in mutant fad larvae. Genomic mapping of fad reveals distinct genomic positions of the mutant gene from known human HPS genes. CONCLUSIONS: The fad mutant shows syndromic defects in pigmentation, outer retinal structure and function, and blood clotting. This syndrome is characteristic of Hermansky-Pudlak syndrome (HPS), making fad a novel genetic model of HPS. The gene does not cosegregate with the known human HPS genes, suggesting a novel molecular cause of HPS.

L47 ANSWER 2 OF 6 HCAPLUS COPYRIGHT 2007 ACS on STN DUPLICATE 2
ACCESSION NUMBER: 2004:905864 HCAPLUS Full-text
DOCUMENT NUMBER: 141:344568
TITLE: Screening methods using **zebrafish** to identify thrombotic and anti-thrombotic compounds and genes
INVENTOR(S): **Jagadeeswaran, Pudur**
PATENT ASSIGNEE(S): Board of Regents, the University of Texas System, USA
SOURCE: PCT Int. Appl., 62 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004092325	A2	20041028	WO 2003-US41249	20031224
WO 2004092325	A3	20050303		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
AU 2003303742	A1	20041104	AU 2003-303742	20031224
US 2005244808	A1	20051103	US 2005-525571	20050630

PRIORITY APPLN. INFO.:

US 2002-436270P	P	20021224
US 2003-456774P	P	20030321
WO 2003-US41249	W	20031224

AB Disclosed are improved methods using **zebrafish** to identifying anti-thrombotic substances for use in therapy and to identify genes associated with all aspects of thrombus formation, including those associated with an increased risk of thrombosis in human. The preferred screening assays described include laser **irradn** . injury, sodium hydroxide-induced gill bleeding and red cell lysis assays conducted in **zebrafish** and applicable to the study of thrombosis in human.

L47 ANSWER 3 OF 6 DISSABS COPYRIGHT (C) 2007 ProQuest Information and Learning Company; All Rights Reserved on STN

ACCESSION NUMBER: 2003:44271 DISSABS Order Number: AAI3076388
TITLE: Genetic analysis of hemostasis and thrombosis using vascular occlusion in **zebrafish**
AUTHOR: Gregory, Michael Joseph [Ph.D.]; **Jagadeeswaran, Pudur [advisor]**
CORPORATE SOURCE: The University of Texas Health Science Center at San Antonio (0853)
SOURCE: Dissertation Abstracts International, (2003) Vol. 63, No. 12B, p. 5651. Order No.: AAI3076388. 149 pages. ISBN: 0-493-96760-5.
DOCUMENT TYPE: Dissertation
FILE SEGMENT: DAI
LANGUAGE: English

AB Although genetic analysis of individuals prone to thrombosis has identified genetic mutations that correlate with an increased risk of thrombosis, only 50% of the cases of inherited venous thrombophilia can be attributed to one known genetic risk factor (Reitsma, 2001). To further investigate genetic factors affecting thrombosis, animal models have been developed. However, none of the current models has been used in a genetic screen of thrombosis because of cost constraints and lack amenability to large-scale screening. The **zebrafish** presents an excellent alternative genetic model to study vascular occlusion and thrombosis because of its proven relevance to mammalian hemostasis and the feasibility of genetic screens in the **zebrafish** (Driever et al., 1996; Jagadeeswaran & Sheehan, 1999). Here, I present the development of chemical and laser methods to induce vascular occlusion in **zebrafish** larvae. Two chemicals, ferric chloride and phenylhydrazine, caused uniformed vascular injury leading to vascular occlusion in the caudal arteries of **zebrafish** larvae. The use of laser **irradiation** to induce vascular injury produced either venous or arterial occlusions. Fluorescent labeling techniques were developed to demonstrate fibrin deposition and thrombocyte adherence at the site of injury induced by these agents. Further investigation demonstrated that both ferric chloride and laser **irradiation** caused a true thrombus formation, whereas phenylhydrazine treatment resulted in an occlusion that involved changes in the properties of erythrocytes. To utilize these methods for identifying naturally occurring mutations affecting thrombosis, clutches of homozygous gynogenetic-diploid larvae were screened from female **zebrafish** for variations in the time to occlusion after vascular injury. Several **zebrafish** were identified as carriers of recessive mutations that significantly prolonged the time to occlusion in their homozygous progeny. To characterize the mutant locus, linkage studies were performed on the progeny from one of these **zebrafish**. Bulk segregant analysis using a panel of 214 microsatellite markers spanning the **zebrafish** genome established association of the prolonged time to occlusion phenotype to a locus, termed victoria, on linkage group 7 of the **zebrafish** genome. This constitutes the first larval genetic screen for thrombosis in the **zebrafish** and this model should prove useful in the determination of novel thrombotic factors.

L47 ANSWER 4 OF 6 HCAPLUS COPYRIGHT 2007 ACS on STN DUPLICATE 3
ACCESSION NUMBER: 2003:52866 HCAPLUS Full-text
DOCUMENT NUMBER: 139:67137
TITLE: Genetic Analysis of Hemostasis and Thrombosis Using Vascular Occlusion
AUTHOR(S): Gregory, Michael; Hanumanthaiah, Ravikumar; **Jagadeeswaran, Pudur**
CORPORATE SOURCE: Dept. of Cellular and Structural Biology, The Univ. of Texas Health Science Center at San Antonio, San Antonio, TX, 78229, USA
SOURCE: Blood Cells, Molecules & Diseases (2002), 29(3), 286-295
CODEN: BCMDFX; ISSN: 1079-9796
PUBLISHER: Elsevier Science
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The **zebrafish** is an excellent model for mammalian hemostasis and thrombosis since it possesses coagulation factors, thrombocyte receptors and responds to anti-coagulant and anti-platelet drugs commonly used in clin. treatment. In this study, exposure of larvae to FeCl3 or laser **irradiation** produced a vessel injury that caused a visible vascular occlusion as a result of thrombus formation. Using the time to vascular occlusion as an assay, two screening strategies were tested for their utility in identifying novel genes involved in thrombosis. Morpholino knockdown studies of **zebrafish** factor VII showed a prolongation of the time to occlusion of the vessel whereas knockdown of the recently discovered factor VIIi resulted in a shortening of the time. Genetic screening of a population of **zebrafish** identified mutants that showed a prolongation of the time to occlusion. Bulk segregant anal. showed linkage of one mutant to a locus, victoria, on linkage group 7. Thus, the vascular occlusion assay developed in this report measures in vivo thrombus formation and is a powerful tool for identifying novel genes involved in thrombosis.
REFERENCE COUNT: 29 THERE ARE 29 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L47 ANSWER 5 OF 6 HCAPLUS COPYRIGHT 2007 ACS on STN DUPLICATE 4
ACCESSION NUMBER: 2001:561173 HCAPLUS Full-text
DOCUMENT NUMBER: 135:208361
TITLE: Demonstration of the extrinsic coagulation pathway in Teleostei: identification of **zebrafish** coagulation factor VII
AUTHOR(S): Sheehan, John; Templer, Michael; Gregory, Michael; Hanumanthaiah, Ravikumar; Troyer, Dean; Phan, Thao; Thankavel, Bharath; **Jagadeeswaran, Pudur**
CORPORATE SOURCE: Department of Medicine, South Texas Veteran's Health Care System (Audie Murphy Division), University of Texas Health Science Center, San Antonio, TX, 78229, USA
SOURCE: Proceedings of the National Academy of Sciences of the United States of America (2001), 98(15), 8768-8773
CODEN: PNASA6; ISSN: 0027-8424
PUBLISHER: National Academy of Sciences
DOCUMENT TYPE: Journal
LANGUAGE: English
AB A cDNA was cloned from a **zebrafish** (teleost) library that predicted a protein with sequence similarity to human factor VII. Factor VII was shown to be

present in **zebrafish** blood and liver by Western blot anal. and immunohistochem. Immunodepletion of factor VII from **zebrafish** plasma selectively inhibited thromboplastin-triggered thrombin generation. Heterologous expression of **zebrafish** factor VII demonstrated a secreted protein (50 kDa) that reconstituted thromboplastin-triggered thrombin generation in immunodepleted **zebrafish** plasma. These results suggest conservation of the extrinsic coagulation pathway between **zebrafish** and humans and add credence to the **zebrafish** as a model for mammalian hemostasis. The structure of **zebrafish** factor VIIa predicted by homol. modeling was consistent with the overall 3-dimensional structure of human factor VIIa. However, amino acid disparities were found in the EGF-2/serine protease regions that are present in the human tissue factor-factor VIIa contact surface, suggesting a structural basis for the species specificity of this interaction. In addition, **zebrafish** factor VII demonstrates that the Gla-EGF-EGF-SP domain structure, which is common to coagulation factors VII, IX, X, and protein C, was present before the **radiation** of the teleosts from the tetrapods. Identification of **zebrafish** factor VII significantly narrows the evolutionary window for development of the vertebrate coagulation cascade and provides insight into the structural basis for species specificity in the tissue factor-factor VIIa interaction.

REFERENCE COUNT: 37 THERE ARE 37 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L47 ANSWER 6 OF 6 MEDLINE on STN DUPLICATE 5

ACCESSION NUMBER: 97358654 MEDLINE Full-text
DOCUMENT NUMBER: PubMed ID: 9215750
TITLE: A hemophilia model in **zebrafish**: analysis of hemostasis.
AUTHOR: **Jagadeeswaran P**; Liu Y C
CORPORATE SOURCE: Department of Cellular and Structural Biology, The University of Texas Health Science Center at San Antonio, 78284-7964, USA.. jagadeeswar@uthscsa.edu
SOURCE: Blood cells, molecules & diseases, (1997) Vol. 23, No. 1, pp. 52-7.
Journal code: 9509932. ISSN: 1079-9796.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199710
ENTRY DATE: Entered STN: 21 Oct 1997
Last Updated on STN: 29 Jan 1999
Entered Medline: 3 Oct 1997

AB We have developed artificial hemophilia in **zebrafish** by treating them with copper and measured their clotting function by a newly developed sensitive clotting time assay. The clotting function can be detected rapidly and reliably in 30 hr larvae and in adult fish by measuring the blood clotting time. We have used this assay to screen wild type **zebrafish** and identified fish with prolonged clotting time. This verifies the usefulness of this assay in future screening for recessive hemostasis defects generated by chemical and **radiation** mutagenesis methods.

FILE 'HOME' ENTERED AT 11:00:42 ON 24 JUL 2007

```
=> d his ful

     FILE 'REGISTRY' ENTERED AT 10:33:31 ON 24 JUL 2007
                E SODIUM HYDROXIDE/CN 5
L1              8 SEA ABB=ON  PLU=ON  ("SODIUM HYDROXIDE"/CN OR "SODIUM
                  HYDROXIDE (22NA(OH))"/CN OR "SODIUM HYDROXIDE (24NA(OH))"/C
                  N OR "SODIUM HYDROXIDE (NA(17OH))"/CN OR "SODIUM HYDROXIDE
                  (NA(18OD))"/CN OR "SODIUM HYDROXIDE (NA(18OH))"/CN OR
                  "SODIUM HYDROXIDE (NA(18OT))"/CN OR "SODIUM HYDROXIDE
                  (NA(OD))"/CN)
                E AGAROSE/CN 5
L2              1 SEA ABB=ON  PLU=ON  AGAROSE/CN

     FILE 'HCAPLUS' ENTERED AT 10:33:55 ON 24 JUL 2007
L3           8237 SEA ABB=ON  PLU=ON  ZEBRAFISH OR ZEBRA(W)(FISH OR DANIO)
                  OR RERIO
L4              9 SEA ABB=ON  PLU=ON  L3 AND (LASER(S)(THERAPY OR BIOSTIMUL?
                  OR (BIO OR BIOL?)(W)STIMUL? OR IRRADIAT? OR RADIAT?) OR
                  LLLT)
L5              3 SEA ABB=ON  PLU=ON  L3 AND (L1 OR (NA OR SODIUM)(W)(OH OR
                  HYDROXIDE) OR NAOH)
L6             10 SEA ABB=ON  PLU=ON  L3 AND (L2 OR AGAROSE OR SEPHAROSE)
L7              1 SEA ABB=ON  PLU=ON  L6 AND IMMOBIL?
L8             12 SEA ABB=ON  PLU=ON  L4 OR L5 OR L7
                D QUE L4
                D QUE L5
                D QUE L7
                D L8 1-12

     FILE 'MEDLINE, BIOSIS, EMBASE, WPIX, JAPIO, PASCAL, DISSABS, CABA,
     AGRICOLA, VETU, VETB' ENTERED AT 10:39:01 ON 24 JUL 2007
L9             14 SEA ABB=ON  PLU=ON  L4
L10             7 SEA ABB=ON  PLU=ON  L5
L11             5 SEA ABB=ON  PLU=ON  L7
L12            24 SEA ABB=ON  PLU=ON  L9 OR L10 OR L11
L13            15 DUP REM L12 (9 DUPLICATES REMOVED)
                D 1-15 IBIB ABS

     FILE 'HCAPLUS' ENTERED AT 10:43:40 ON 24 JUL 2007
L14           193 SEA ABB=ON  PLU=ON  L3 AND (RADIAT? OR IRRADIAT?)
L15             1 SEA ABB=ON  PLU=ON  L14 AND (L1 OR (NA OR SODIUM)(W)(OH OR
                  HYDROXIDE) OR NAOH)
L16             1 SEA ABB=ON  PLU=ON  L14 AND (L2 OR AGAROSE OR SEPHAROSE)
L17             0 SEA ABB=ON  PLU=ON  (L15 OR L16) NOT L8

     FILE 'MEDLINE, BIOSIS, EMBASE, WPIX, JAPIO, PASCAL, DISSABS, CABA,
     AGRICOLA, VETU, VETB' ENTERED AT 10:45:23 ON 24 JUL 2007
L18             1 SEA ABB=ON  PLU=ON  L15
L19             1 SEA ABB=ON  PLU=ON  L16
L20             0 SEA ABB=ON  PLU=ON  (L18 OR L19) NOT L12

     FILE 'HCAPLUS' ENTERED AT 10:47:30 ON 24 JUL 2007
                E ZEBRA FISH+ALL/CT
                E E2+ALL
L21          6203 SEA ABB=ON  PLU=ON  "DANIO RERIO"+OLD/CT
                E LASER RADIATION+ALL/CT
L22        125542 SEA ABB=ON  PLU=ON  "LASER RADIATION"+NT/CT
L23             5 SEA ABB=ON  PLU=ON  L21 AND L22
L24             2 SEA ABB=ON  PLU=ON  L21 AND (L1 OR (NA OR SODIUM)(W)(OH OR
```

```
                HYDROXIDE) OR NAOH)
L25             7 SEA ABB=ON  PLU=ON  L21 AND (L2 OR AGAROSE OR SEPHAROSE)
L26             5 SEA ABB=ON  PLU=ON  (L23 OR L24 OR L25) NOT L8
                D QUE L23
                D QUE L24
                D QUE L25
                D L26 1-5

     FILE 'MEDLINE, BIOSIS, EMBASE, WPIX, JAPIO, PASCAL, DISSABS, CABA,
     AGRICOLA, VETU, VETB' ENTERED AT 10:50:21 ON 24 JUL 2007
L27             0 SEA ABB=ON  PLU=ON  L23
L28             0 SEA ABB=ON  PLU=ON  L24
L29             0 SEA ABB=ON  PLU=ON  L25

     FILE 'MEDLINE' ENTERED AT 10:50:50 ON 24 JUL 2007
                E ZEBRAFISH+ALL/CT
L30          5923 SEA ABB=ON  PLU=ON  (ZEBRAFISH/CT OR B1.150.900.493.200.244
                .828./CT)
                E "LOW LEVEL, LASER THERAPY"+ALL/CT
                E "LASER THERAPY, LOW LEVEL"+ALL/CT
                E E2+ALL
L31          1029 SEA ABB=ON  PLU=ON  ("LASER THERAPY, LOW-LEVEL"/CT OR
                E2.774.500./CT)
L32             0 SEA ABB=ON  PLU=ON  L30 AND L31
                E SODIUM HYDROXIDE+ALL/CT
L33          2842 SEA ABB=ON  PLU=ON  ("SODIUM HYDROXIDE"/CT OR D1.45.250.750
                ./CT OR D1.455.824./CT OR D1.857.745./CT)
L34             0 SEA ABB=ON  PLU=ON  L30 AND L33
                E AGAROSE+ALL/CT
                E E2+ALL
L35          5258 SEA ABB=ON  PLU=ON  (SEPHAROSE/CT OR D9.698.813./CT)
L36             5 SEA ABB=ON  PLU=ON  L30 AND L35
                E MUTATION+ALL/CT
L37        400785 SEA ABB=ON  PLU=ON  (MUTATION/CT OR G13.920.590./CT)
                E MUTAGENESIS+ALL/CT
L38        122516 SEA ABB=ON  PLU=ON  (MUTAGENESIS/CT OR G5.600./CT)
                E POLYMORPHISM+ALL/CT
                E POLYMORPHISMS+ALL/CT
                E "POLYMORPHISM, GENETIC"+ALL/CT
L39        103835 SEA ABB=ON  PLU=ON  ("POLYMORPHISM, GENETIC"/CT OR
                G13.920.795./CT)
                E MUTANTS+ALL/CT
L40             0 SEA ABB=ON  PLU=ON  L36 AND (L37 OR L38 OR L39)
                D QUE L32
                D QUE L34
                D QUE L40
L41          1357 SEA ABB=ON  PLU=ON  L30 AND (L37 OR L38 OR L39)
                E VEIN+ALL/CT
                E E2+ALL
L42        154033 SEA ABB=ON  PLU=ON  (VEINS/CT OR A7.231.908./CT)
                E ARTERY+ALL/CT
                E E2+ALL
L43        306228 SEA ABB=ON  PLU=ON  (ARTERIES/CT OR A7.231.114./CT)
L44            10 SEA ABB=ON  PLU=ON  L41 AND (L42 OR L43)
                D QUE
                D 1-10

     FILE 'HCAPLUS, MEDLINE, BIOSIS, EMBASE, WPIX, JAPIO, PASCAL, DISSABS,
     CABA, AGRICOLA, VETU, VETB' ENTERED AT 10:58:18 ON 24 JUL 2007
L45            90 SEA ABB=ON  PLU=ON  ("JAGADEESWARAN P"? OR "PUDUR J"?)/AU
```

```
                AND L3
L46          15 SEA ABB=ON  PLU=ON  L45 AND (RADIAT? OR IRRADIAT?)
L47           6 DUP REM L46 (9 DUPLICATES REMOVED)
                D 1-6 IBIB ABS

FILE 'HOME' ENTERED AT 11:00:42 ON 24 JUL 2007


FILE REGISTRY
Property values tagged with IC are from the ZIC/VINITI data file
provided by InfoChem.

STRUCTURE FILE UPDATES:   23 JUL 2007  HIGHEST RN 943188-87-2
DICTIONARY FILE UPDATES:  23 JUL 2007  HIGHEST RN 943188-87-2

New CAS Information Use Policies, enter HELP USAGETERMS for details.

TSCA INFORMATION NOW CURRENT THROUGH December 2, 2006

  Please note that search-term pricing does apply when
  conducting SmartSELECT searches.

REGISTRY includes numerically searchable data for experimental and
predicted properties as well as tags indicating availability of
experimental property data in the original document.  For information
on property searching in REGISTRY, refer to:

http://www.cas.org/support/stngen/stndoc/properties.html

FILE HCAPLUS

Copyright of the articles to which records in this database refer is
held by the publishers listed in the PUBLISHER (PB) field (available
for records published or updated in Chemical Abstracts after December
26, 1996), unless otherwise indicated in the original publications.
The CA Lexicon is the copyrighted intellectual property of the
the American Chemical Society and is provided to assist you in searchi
databases on STN.  Any dissemination, distribution, copying, or storin
of this information, without the prior written consent of CAS, is
strictly prohibited.

FILE COVERS 1907 - 24 Jul 2007  VOL 147 ISS 5
FILE LAST UPDATED: 23 Jul 2007  (20070723/ED)

New CAS Information Use Policies, enter HELP USAGETERMS for details.

 This file contains CAS Registry Numbers for easy and accurate
 substance identification.

FILE MEDLINE
 FILE LAST UPDATED: 21 Jul 2007 (20070721/UP).  FILE COVERS 1950 TO DA

  This file contains CAS Registry Numbers for easy and accurate
  substance identification.

FILE BIOSIS
FILE COVERS 1926 TO DATE.
CAS REGISTRY NUMBERS AND CHEMICAL NAMES (CNs) PRESENT
FROM JANUARY 1926 TO DATE.
```

RECORDS LAST ADDED: 18 July 2007 (20070718/ED)

BIOSIS has been augmented with 1.8 million archival records from 1926 through 1968. These records have been re-indexed to match current BIOSIS indexing.

FILE EMBASE
FILE COVERS 1974 TO 24 Jul 2007 (20070724/ED)

EMBASE is now updated daily. SDI frequency remains weekly (default) and biweekly.

This file contains CAS Registry Numbers for easy and accurate substance identification.

FILE WPIX
FILE LAST UPDATED: 19 JUL 2007 <20070719/UP>
MOST RECENT THOMSON SCIENTIFIC UPDATE: 200746 <200746/DW>
DERWENT WORLD PATENTS INDEX SUBSCRIBER FILE, COVERS 1963 TO DATE

>>> IPC Reform backfile reclassification has been loaded to 31 May 2007. No update date (UP) has been created for the reclassified documents, but they can be identified by 20060101/UPIC and 20061231/UPIC and 20060601/UPIC. <<<

FOR A COPY OF THE DERWENT WORLD PATENTS INDEX STN USER GUIDE, PLEASE VISIT:
http://www.stn-international.de/training_center/patents/stn_guide.pdf

FOR DETAILS OF THE PATENTS COVERED IN CURRENT UPDATES, SEE
http://scientific.thomson.com/support/patents/coverage/latestupdates/

>>> FOR DETAILS ON THE NEW AND ENHANCED DERWENT WORLD PATENTS INDEX PLEASE SEE
http://www.stn-international.de/stndatabases/details/dwpi_r.html <<<

FILE JAPIO
FILE LAST UPDATED: 4 JUL 2007 <20070704/UP>
FILE COVERS APRIL 1973 TO MARCH 29, 2007

>>> GRAPHIC IMAGES AVAILABLE <<<

FILE PASCAL
FILE LAST UPDATED: 23 JUL 2007 <20070723/UP>
FILE COVERS 1977 TO DATE.

>>> SIMULTANEOUS LEFT AND RIGHT TRUNCATION IS AVAILABLE IN THE BASIC INDEX (/BI) FIELD <<<

FILE DISSABS
FILE COVERS 1861 TO 20 JUL 2007 (20070720/ED)

FILE CABA
FILE COVERS 1973 TO 6 Jul 2007 (20070706/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

The CABA file was reloaded 7 December 2003. Enter HELP RLOAD for deta

FILE AGRICOLA

FILE COVERS 1970 TO 5 Jul 2007 (20070705/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

FILE VETU
FILE LAST UPDATED: 02 JAN 2002 <20020102/UP>
FILE COVERS 1983-2001

FILE VETB
FILE LAST UPDATED: 25 SEP 94 <940925/UP>
FILE COVERS 1968-1982

FILE HOME

```
=> file caplus; d que l5
FILE 'CAPLUS' ENTERED AT 15:27:00 ON 09 MAR 2007
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.
COPYRIGHT (C) 2007 AMERICAN CHEMICAL SOCIETY (ACS)
```



```
FILE COVERS 1907 - 9 Mar 2007  VOL 146 ISS 12
FILE LAST UPDATED: 8 Mar 2007  (20070308/ED)

Effective October 17, 2005, revised CAS Information Use Policies apply.
They are available for your review at:

http://www.cas.org/infopolicy.html


L2            52 SEA FILE=CAPLUS ABB=ON  PLU=ON  JAGADEESWARAN P?/AU
L3             9 SEA FILE=CAPLUS ABB=ON  PLU=ON  L2 AND THROMB?
L4            12 SEA FILE=CAPLUS ABB=ON  PLU=ON  L2 AND (ZEBRA? OR ?FISH)
L5            13 SEA FILE=CAPLUS ABB=ON  PLU=ON  (L3 OR L4)


=> d ibib ed ab l5 1-13

L5   ANSWER 1 OF 13  CAPLUS  COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER:         2005:1304731  CAPLUS  Full-text
DOCUMENT NUMBER:          144:167868
TITLE:                    SLC24A5, a Putative Cation Exchanger, Affects
                          Pigmentation in Zebrafish and Humans
AUTHOR(S):                Lamason, Rebecca L.; Mohideen, Manzoor-Ali P. K.;
                          Mest, Jason R.; Wong, Andrew C.; Norton, Heather L.;
                          Aros, Michele C.; Jurynec, Michael J.; Mao, Xianyun;
                          Humphreville, Vanessa R.; Humbert, Jasper E.; Sinha,
                          Soniya; Moore, Jessica L.; Jagadeeswaran,
                          Pudur; Zhao, Wei; Ning, Gang; Makalowska,
                          Izabela; McKeigue, Paul M.; O'Donnell, David; Kittles,
                          Rick; Parra, Esteban J.; Mangini, Nancy J.; Grunwald,
                          David J.; Shriver, Mark D.; Canfield, Victor A.;
                          Cheng, Keith C.
CORPORATE SOURCE:         Jake Gittlen Cancer Research Foundation, Department of
                          Pathology, The Pennsylvania State University College
                          of Medicine, Hershey, PA, 17033, USA
SOURCE:                   Science (Washington, DC, United States) (2005),
                          310(5755), 1782-1786
                          CODEN: SCIEAS; ISSN: 0036-8075
PUBLISHER:                American Association for the Advancement of Science
DOCUMENT TYPE:            Journal
LANGUAGE:                 English
ED   Entered STN:  14 Dec 2005
```

AB Lighter variations of pigmentation in humans are associated with diminished number, size, and d. of melanosomes, the pigmented organelles of melanocytes. Here we show that **zebrafish** golden mutants share these melanosomal changes and that golden encodes a putative cation exchanger slc24a5 (nckx5) that localizes to an intracellular membrane, likely the melanosome or its precursor. The human ortholog is highly similar in sequence and functional in **zebrafish**. The evolutionarily conserved ancestral allele of a human coding polymorphism predominates in African and East Asian populations. In contrast, the variant allele is nearly fixed in European populations, is associated with a substantial reduction in regional heterozygosity, and correlates with lighter skin pigmentation in admixed populations, suggesting a key role for the SLC24A5 gene in human pigmentation.

REFERENCE COUNT: 39 THERE ARE 39 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 2 OF 13 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2005:1297346 CAPLUS Full-text
TITLE: A green light for the **thrombopoietic** program
AUTHOR(S): **Jagadeeswaran, Pudur**
CORPORATE SOURCE: University of North Texas
SOURCE: Blood (2005), 106(12), 3685
CODEN: BLOOAW; ISSN: 0006-4971
PUBLISHER: American Society of Hematology
DOCUMENT TYPE: Journal
LANGUAGE: English
ED Entered STN: 12 Dec 2005
AB The opportunity to study the dynamics of **thrombopoeisis** in real time has long been awaited.

L5 ANSWER 3 OF 13 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2005:581022 CAPLUS Full-text
DOCUMENT NUMBER: 143:169706
TITLE: Young **thrombocytes** initiate the formation of arterial **thrombi** in **zebrafish**
AUTHOR(S): Thattaliyath, Bijoy; Cykowski, Matthew; **Jagadeeswaran, Pudur**
CORPORATE SOURCE: Department of Cellular and Structural Biology, The University of Texas Health Science Center, San Antonio, TX, USA
SOURCE: Blood (2005), 106(1), 118-124
CODEN: BLOOAW; ISSN: 0006-4971
PUBLISHER: American Society of Hematology
DOCUMENT TYPE: Journal
LANGUAGE: English
ED Entered STN: 06 Jul 2005
AB The **zebrafish** system is an excellent vertebrate genetic model to study hemostasis and **thrombosis** because saturation mutagenesis screens can identify novel genes that play a role in this vital physiol. pathway. To study hemostatic mutations, it is important to understand the physiol. of **zebrafish** hemostasis and **thrombosis**. Previously, the authors identified **zebrafish** **thrombocytes** and have shown that they participate in arterial **thrombus** formation. Here, the authors recognized 2 populations of **thrombocytes** distinguishable by DiI-C18 (DiI) staining. DiI+ **thrombocytes** have a high d. of adhesive receptors and are functionally more active than DiI- **thrombocytes**. The authors classified DiI+ **thrombocytes** as young and DiI- **thrombocytes** as mature **thrombocytes**. The authors found young and mature **thrombocytes** each formed independent clusters and that young **thrombocytes** clustered first. The authors have also shown that young **thrombocytes** initiate arterial **thrombus** formation. The authors propose that due to the increased adhesive receptor d.

on young **thrombocytes**, they adhere first to the subendothelial matrix, get activated rapidly, release agonists, and recruit more young **thrombocytes**, which further release more agonists. This increase in agonists activates the less active mature **thrombocytes**, drawing them to the growing **thrombus**. Since arterial **thrombus** formation is a fundamental hemostatic event, this mechanism may be conserved in mammals and may open new avenues for prevention of arterial **thrombosis**.

REFERENCE COUNT: 20 THERE ARE 20 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 4 OF 13 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2004:905864 CAPLUS Full-text
DOCUMENT NUMBER: 141:344568
TITLE: Screening methods using **zebrafish** to identify **thrombotic** and anti-**thrombotic** compounds and genes
INVENTOR(S): **Jagadeeswaran, Pudur**
PATENT ASSIGNEE(S): Board of Regents, the University of Texas System, USA
SOURCE: PCT Int. Appl., 62 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004092325	A2	20041028	WO 2003-US41249	20031224
WO 2004092325	A3	20050303		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
AU 2003303742	A1	20041104	AU 2003-303742	20031224
US 2005244808	A1	20051103	US 2005-525571	20050630

PRIORITY APPLN. INFO.:

US 2002-436270P	P	20021224
US 2003-456774P	P	20030321
WO 2003-US41249	W	20031224

ED Entered STN: 29 Oct 2004
AB Disclosed are improved methods using **zebrafish** to identifying anti-**thrombotic** substances for use in therapy and to identify genes associated with all aspects of **thrombus** formation, including those associated with an increased risk of **thrombosis** in human. The preferred screening assays described include laser irradiation injury, sodium hydroxide-induced gill bleeding and red cell lysis assays conducted in **zebrafish** and applicable to the study of **thrombosis** in human.

L5 ANSWER 5 OF 13 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2004:70596 CAPLUS Full-text
DOCUMENT NUMBER: 140:420960
TITLE: Knockdown of prothrombin in **zebrafish**
AUTHOR(S): Day, Kenneth; Krishnegowda, Naveen; **Jagadeeswaran, Pudur**

CORPORATE SOURCE: Department of Cellular and Structural Biology, The University of Texas Health Science Center at San Antonio, San Antonio, TX, 78229, USA
SOURCE: Blood Cells, Molecules, & Diseases (2004), 32(1), 191-198
CODEN: BCMDFX; ISSN: 1079-9796
PUBLISHER: Elsevier Science
DOCUMENT TYPE: Journal
LANGUAGE: English
ED Entered STN: 29 Jan 2004
AB **Thrombin** is a serine protease generated from its zymogen, prothrombin, and plays a central role in the coagulation cascade. It is also important for mammalian development. The **zebrafish** has now been established as an excellent genetic model for studies on mammalian hemostasis and development. The authors used prothrombin-specific antisense morpholinos to knock down the levels of prothrombin to characterize the effects of prothrombin deficiency in the **zebrafish** embryo. Prothrombin morpholino-injected **zebrafish** embryos yielded an early phenotype exhibiting severe abnormalities that later showed occasional bleeding. In a second late phenotype, the embryos had no observable morphol. abnormalities in early stages, but showed occasional bleeding at later stages. These phenotypes resembled characteristics shown by prothrombin knockout mice. Laser-induced vascular injury on some of the normal appearing phenotypic larvae showed a prolonged time to occlusion, and recombinant **zebrafish** prothrombin injected into these larvae restored a normal time to occlusion thus showing the specificity of the morpholino effect. The system developed here should be useful for investigation of the role of **thrombin** in vertebrate development.
REFERENCE COUNT: 19 THERE ARE 19 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 6 OF 13 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2003:883196 CAPLUS Full-text
DOCUMENT NUMBER: 140:300665
TITLE: Radiographic analysis of **zebrafish** skeletal defects
AUTHOR(S): Fisher, Shannon; **Jagadeeswaran, Pudur**; Halpern, Marnie E.
CORPORATE SOURCE: Department of Embryology, Carnegie Institution of Washington, Baltimore, MD, 21210, USA
SOURCE: Developmental Biology (San Diego, CA, United States) (2003), 264(1), 64-76
CODEN: DEBIAO; ISSN: 0012-1606
PUBLISHER: Elsevier
DOCUMENT TYPE: Journal
LANGUAGE: English
ED Entered STN: 11 Nov 2003
AB Systematic identification of skeletal dysplasias in model vertebrates provides insight into the pathogenesis of human skeletal disorders and can aid in the identification of orthologous human genes. We are undertaking a mutagenesis screen for skeletal dysplasias in adult **zebrafish**, using radiog. to detect abnormalities in skeletal anatomy and bone morphol. We have isolated chihuahua, a dominant mutation causing a general defect in bone growth. Heterozygous chihuahua **fish** have phenotypic similarities to human osteogenesis imperfecta, a skeletal dysplasia caused by mutations in the type I collagen genes. Mapping and mol. characterization of the chihuahua mutation indicates that the defect resides in the gene encoding the collagen I(α1) chain. Thus, chihuahua accurately models osteogenesis imperfecta at the biol. and mol. levels, and will prove an important resource for studies on the disease pathophysiol. Radiog. is a practical screening tool to detect subtle skeletal abnormalities in the adult **zebrafish**. The identification of chihuahua

demonstrates that mutant phenotypes analogous to human skeletal dysplasias will be discovered.

REFERENCE COUNT: 51 THERE ARE 51 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 7 OF 13 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2003:688090 CAPLUS Full-text
TITLE: **Zebrafish**-Mycobacterium marinum model for mycobacterial pathogenesis
AUTHOR(S): Prouty, Michael G.; Correa, Nidia E.; Barker, Lucia P.; **Jagadeeswaran, Pudur**; Klose, Karl E.
CORPORATE SOURCE: Department of Microbiology and Immunology, University of Texas Health Science Center, San Antonio, TX, 78229, USA
SOURCE: FEMS Microbiology Letters (2003), 225(2), 177-182
CODEN: FMLED7; ISSN: 0378-1097
PUBLISHER: Elsevier Science B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English
ED Entered STN: 03 Sep 2003
AB We report here the development of a pathogenesis model utilizing Mycobacterium marinum infection of **zebrafish** (Danio rerio) for the study of mycobacterial disease. The **zebrafish** model mimics certain aspects of human tuberculosis, such as the formation of granuloma-like lesions and the ability to establish either an acute or a chronic infection based upon inoculum. This model allows the genetics of mycobacterial disease to be studied in both pathogen and host.
REFERENCE COUNT: 34 THERE ARE 34 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 8 OF 13 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2003:52866 CAPLUS Full-text
DOCUMENT NUMBER: 139:67137
TITLE: Genetic Analysis of Hemostasis and **Thrombosis** Using Vascular Occlusion
AUTHOR(S): Gregory, Michael; Hanumanthaiah, Ravikumar; **Jagadeeswaran, Pudur**
CORPORATE SOURCE: Dept. of Cellular and Structural Biology, The Univ. of Texas Health Science Center at San Antonio, San Antonio, TX, 78229, USA
SOURCE: Blood Cells, Molecules & Diseases (2002), 29(3), 286-295
CODEN: BCMDFX; ISSN: 1079-9796
PUBLISHER: Elsevier Science
DOCUMENT TYPE: Journal
LANGUAGE: English
ED Entered STN: 22 Jan 2003
AB The **zebrafish** is an excellent model for mammalian hemostasis and **thrombosis** since it possesses coagulation factors, **thrombocyte** receptors and responds to anti-coagulant and anti-platelet drugs commonly used in clin. treatment. In this study, exposure of larvae to FeCl3 or laser irradiation produced a vessel injury that caused a visible vascular occlusion as a result of **thrombus** formation. Using the time to vascular occlusion as an assay, two screening strategies were tested for their utility in identifying novel genes involved in **thrombosis**. Morpholino knockdown studies of **zebrafish** factor VII showed a prolongation of the time to occlusion of the vessel whereas knockdown of the recently discovered factor VIIi resulted in a shortening of the time. Genetic screening of a population of **zebrafish** identified mutants that showed a prolongation of the time to occlusion. Bulk segregant anal. showed linkage of one mutant to a locus, victoria, on linkage group 7. Thus, the vascular

occlusion assay developed in this report measures in vivo **thrombus** formation and is a powerful tool for identifying novel genes involved in **thrombosis**.
REFERENCE COUNT: 29 THERE ARE 29 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 9 OF 13 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2001:561173 CAPLUS Full-text
DOCUMENT NUMBER: 135:208361
TITLE: Demonstration of the extrinsic coagulation pathway in Teleostei: identification of **zebrafish** coagulation factor VII
AUTHOR(S): Sheehan, John; Templer, Michael; Gregory, Michael; Hanumanthaiah, Ravikumar; Troyer, Dean; Phan, Thao; Thankavel, Bharath; **Jagadeeswaran, Pudur**
CORPORATE SOURCE: Department of Medicine, South Texas Veteran's Health Care System (Audie Murphy Division), University of Texas Health Science Center, San Antonio, TX, 78229, USA
SOURCE: Proceedings of the National Academy of Sciences of the United States of America (2001), 98(15), 8768-8773
CODEN: PNASA6; ISSN: 0027-8424
PUBLISHER: National Academy of Sciences
DOCUMENT TYPE: Journal
LANGUAGE: English
ED Entered STN: 03 Aug 2001
AB A cDNA was cloned from a **zebrafish** (teleost) library that predicted a protein with sequence similarity to human factor VII. Factor VII was shown to be present in **zebrafish** blood and liver by Western blot anal. and immunohistochem. Immunodepletion of factor VII from **zebrafish** plasma selectively inhibited **thromboplastin**-triggered **thrombin** generation. Heterologous expression of **zebrafish** factor VII demonstrated a secreted protein (50 kDa) that reconstituted **thromboplastin** -triggered **thrombin** generation in immunodepleted **zebrafish** plasma. These results suggest conservation of the extrinsic coagulation pathway between **zebrafish** and humans and add credence to the **zebrafish** as a model for mammalian hemostasis. The structure of **zebrafish** factor VIIa predicted by homol. modeling was consistent with the overall 3-dimensional structure of human factor VIIa. However, amino acid disparities were found in the EGF-2/serine protease regions that are present in the human tissue factor-factor VIIa contact surface, suggesting a structural basis for the species specificity of this interaction. In addition, **zebrafish** factor VII demonstrates that the Gla-EGF-EGF-SP domain structure, which is common to coagulation factors VII, IX, X, and protein C, was present before the radiation of the teleosts from the tetrapods. Identification of **zebrafish** factor VII significantly narrows the evolutionary window for development of the vertebrate coagulation cascade and provides insight into the structural basis for species specificity in the tissue factor-factor VIIa interaction.
REFERENCE COUNT: 37 THERE ARE 37 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 10 OF 13 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2000:859218 CAPLUS Full-text
DOCUMENT NUMBER: 135:252523
TITLE: Characterization of **Zebrafish** Full-Length Prothrombin cDNA and Linkage Group Mapping
AUTHOR(S): **Jagadeeswaran, Pudur**; Gregory, Michael; Zhou, Yi; Zon, Leonard; Padmanabhan, Kaillathe; Hanumanthaiah, Ravikumar; Lichtman, Marshall
CORPORATE SOURCE: Department of Cellular and Structural Biology, University of Texas Health Science Center at San

Antonio, San Antonio, TX, 78229, USA
SOURCE: Blood Cells, Molecules & Diseases (2000), 26(5), 479-489
CODEN: BCMDFX; ISSN: 1079-9796
PUBLISHER: Academic Press
DOCUMENT TYPE: Journal
LANGUAGE: English
ED Entered STN: 08 Dec 2000
AB In this paper, we report the complete cDNA sequence of **zebrafish** prothrombin. The cDNA sequence predicts that **zebrafish** prothrombin is synthesized as a pre-proprotein consisting of a Gla domain, two kringle domains, and a two-chain protease domain. **Zebrafish** prothrombin is structurally very similar to human and other vertebrate prothrombins. **Zebrafish** and human prothrombin share 53% amino acid identity whereas **zebrafish** and **hagfish** prothrombin share 51% identity. Amino acid alignments of various prothrombins identified conservation of many of the functional/structural motifs suggesting that the vertebrate prothrombins may have similar functions. The three-dimensional structure of prothrombin predicted by homol. modeling also revealed that the prothrombin fragment 1 and the catalytic domain structures are well conserved except for the insertion of an extra 7-amino-acid loop in the connecting region (CR) between the Gla and kringle I domain of fragment 1. Linkage anal. revealed that the prothrombin gene locus on linkage group 7 in **zebrafish** is syntenic to the human chromosome 11-prothrombin region suggesting its preservation through evolution. The availability of this cDNA sequence in **zebrafish** adds to our knowledge of the **zebrafish** hemostatic system and provides support for the view that similarities between **zebrafish** and mammalian coagulation exist, thus under-scoring the relevance of the **zebrafish** model for studying human hemostasis. (c) 2000 The Blood Cells Foundation, La Jolla, CA, USA.
REFERENCE COUNT: 30 THERE ARE 30 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 11 OF 13 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1999:64449 CAPLUS Full-text
DOCUMENT NUMBER: 130:294163
TITLE: Analysis of hemostasis in the **zebrafish**
AUTHOR(S): **Jagadeeswaran, Pudur**; Liu, Yuan C.; Sheehan, John P.
CORPORATE SOURCE: Department of Cellular and Structural Biology, University of Texas, San Antonio, TX, 78284, USA
SOURCE: Methods in Cell Biology (1999), 59(Zebrafish: Biology), 337-357
CODEN: MCBLAG; ISSN: 0091-679X
PUBLISHER: Academic Press
DOCUMENT TYPE: Journal; General Review
LANGUAGE: English
ED Entered STN: 01 Feb 1999
AB A review with numerous refs. The **zebrafish** is an important animal model that has provided a unique tool for the study of developmental pathways in vertebrates. This model employs the power of saturation mutagenesis to screen for genes involved in vertebrate specific developmental functions. Moreover given the availability of appropriate screening assays the genetic power of this system can be harnessed for the study of other vertebrate functions. In this chapter we describe an approach to the study of hemostasis in **zebrafish**. Hemostasis is a complex and highly regulated vertebrate process reflecting its fundamental role in the response to injury. The **zebrafish** model represents a novel approach to identification of the genes involved in this response. This chapter provides a brief review of the pathophysiol. of the human system rationale for development of the **zebrafish** model current knowledge of **fish** hemostasis and potential relevance to human hemostasis. Assays for

characterization of the **zebrafish** hemostatic system and for screening hemostatic mutants are described with a discussion of potential further applications. The relevance of the **zebrafish** model to the study of hemostasis is emphasized; the details of the standard methodol. are provided elsewhere in this volume To provide the background for the discussion of the **zebrafish** system we begin by describing the major components of the mammalian hemostatic system. (c) 1999 Academic Press.

REFERENCE COUNT: 55 THERE ARE 55 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 12 OF 13 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1998:159347 CAPLUS Full-text
DOCUMENT NUMBER: 128:255305
TITLE: Effects of hirudin (**thrombin** specific inhibitor) in **zebrafish** embryos: a developmental role for **thrombin**
AUTHOR(S): **Jagadeeswaran, Pudur**; Liu, Yuan C.; Eddy, Carlton A.
CORPORATE SOURCE: Department of Cellular and Structural Biology, The University of Texas Health Science Center at San Antonio, San Antonio, TX, 78284-7762, USA
SOURCE: Blood Cells, Molecules & Diseases (1997), 23(3), 410-414
CODEN: BCMDFX; ISSN: 1079-9796
PUBLISHER: Academic Press
DOCUMENT TYPE: Journal
LANGUAGE: English
ED Entered STN: 18 Mar 1998
AB To address the role of **thrombin** in early embryogenesis, hirudin, a **thrombin** specific inhibitor was microinjected into developing **zebrafish** embryos to inhibit the temporal activity of **thrombin** during early embryonic development. The fibrin-forming activity is inhibited by the presence of hirudin. Hirudin affects development in **zebrafish** embryos suggesting **thrombin**'s role in early embryogenesis. This ability to inhibit **thrombin** activity in developing embryos should facilitate studies on identifying signal transduction pathways affected by **thrombin** during embryogenesis.
REFERENCE COUNT: 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 13 OF 13 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1997:723108 CAPLUS Full-text
DOCUMENT NUMBER: 128:2077
TITLE: Developmental expression of **thrombin** in **zebrafish** embryos: a novel model to study hemostasis
AUTHOR(S): **Jagadeeswaran, Pudur**; Liu, Yuan C.
CORPORATE SOURCE: Department of Cellular and Structural Biology, The University of Texas Health Science Center at San Antonio, San Antonio, TX, 78284-7762, USA
SOURCE: Blood Cells, Molecules & Diseases (1997), 23(2), 147-156
CODEN: BCMDFX; ISSN: 1079-9796
PUBLISHER: Academic
DOCUMENT TYPE: Journal
LANGUAGE: English
ED Entered STN: 17 Nov 1997
AB A partial cDNA encoding **zebrafish** prothrombin has been cloned and used as a probe to study the temporal expression of prothrombin mRNA during early embryonic development. The results revealed accumulation of prothrombin mRNA in diverse tissues such as the eyes and myotomes in early embryogenesis. We

have also examined the enzymic activity of **thrombin** in converting fibrinogen to fibrin in individual embryos at different stages of development. The fibrin-forming activity does not temporally correlate with the 1st presence of **thrombin** mRNA in the early stages of embryogenesis, but does correlate with the initiation of blood formation. Our ability to observe the fibrin-forming activity in single individual embryo will facilitate studies on identifying recessive mutations affecting blood coagulation, such as the regulatory gene mutations controlling the clotting factor genes. Furthermore, the observation of **thrombin** activity will also facilitate studies on the blood coagulation pathways in the early embryogenesis in this **zebrafish** model.

REFERENCE COUNT: 19 THERE ARE 19 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

```
=> => file medline; d que l19
FILE 'MEDLINE' ENTERED AT 16:18:08 ON 09 MAR 2007

 FILE LAST UPDATED: 8 Mar 2007 (20070308/UP). FILE COVERS 1950 TO DATE.

  All regular MEDLINE updates from November 15 to December 16 have been
  added to MEDLINE, along with 2007 Medical Subject Headings (MeSH(R))
  and 2007 tree numbers.

  The annual reload will be available in early 2007.

  This file contains CAS Registry Numbers for easy and accurate
  substance identification.


L16           54 SEA FILE=MEDLINE ABB=ON  PLU=ON  JAGADEESWARAN P?/AU
L17           28 SEA FILE=MEDLINE ABB=ON  PLU=ON  L16 AND (?THROMB? OR ?COAGULA?
                 )
L18           24 SEA FILE=MEDLINE ABB=ON  PLU=ON  L16 AND ZEBRAFISH
L19           19 SEA FILE=MEDLINE ABB=ON  PLU=ON  L17 AND L18


=> file embase; d que l34
FILE 'EMBASE' ENTERED AT 16:18:15 ON 09 MAR 2007
Copyright (c) 2007 Elsevier B.V. All rights reserved.

 FILE COVERS 1974 TO 9 Mar 2007 (20070309/ED)

 EMBASE is now updated daily.  SDI frequency remains weekly (default)
 and biweekly.

 This file contains CAS Registry Numbers for easy and accurate
 substance identification.


L31           44 SEA FILE=EMBASE ABB=ON  PLU=ON  JAGADEESWARAN P/AU
L32            9 SEA FILE=EMBASE ABB=ON  PLU=ON  THROMBO? AND L31
L33           20 SEA FILE=EMBASE ABB=ON  PLU=ON  ZEBRA FISH AND L31
L34           21 SEA FILE=EMBASE ABB=ON  PLU=ON  (L32 OR L33)


=> file biosis; d que l21
FILE 'BIOSIS' ENTERED AT 16:18:22 ON 09 MAR 2007
Copyright (c) 2007 The Thomson Corporation

FILE COVERS 1969 TO DATE.
CAS REGISTRY NUMBERS AND CHEMICAL NAMES (CNs) PRESENT
FROM JANUARY 1969 TO DATE.

RECORDS LAST ADDED: 7 March 2007 (20070307/ED)


L21       150796 SEA FILE=MEDLINE ABB=ON  PLU=ON  ANTICOAGULANTS+NT/CT


=> file wpix; d que l47
FILE 'WPIX' ENTERED AT 16:18:35 ON 09 MAR 2007
```

FILE LAST UPDATED: 5 MAR 2007 <20070305/UP>
MOST RECENT THOMSON SCIENTIFIC UPDATE: 200716 <200716/DW>
DERWENT WORLD PATENTS INDEX SUBSCRIBER FILE, COVERS 1963 TO DATE

>>> YOU ARE IN THE NEW AND ENHANCED DERWENT WORLD PATENTS INDEX <<<

>>> New display format FRAGHITSTR available <<<
SEE ONLINE NEWS and
http://www.stn-international.de/archive/stn_online_news/fraghitstr_ex.pdf

>>> IPC Reform reclassification data for the backfile is being loaded into the database during January 2007.
There will not be any update date (UP) written for the reclassified documents, but they can be identified by 20060101/UPIC. <<<

FOR A COPY OF THE DERWENT WORLD PATENTS INDEX STN USER GUIDE,
PLEASE VISIT:
http://www.stn-international.de/training_center/patents/stn_guide.pdf

FOR DETAILS OF THE PATENTS COVERED IN CURRENT UPDATES, SEE
http://scientific.thomson.com/support/patents/coverage/latestupdates/

PLEASE BE AWARE OF THE NEW IPC REFORM IN 2006, SEE
http://www.stn-international.de/stndatabases/details/ipc_reform.html and
http://scientific.thomson.com/media/scpdf/ipcrdwpi.pdf

>>> FOR DETAILS ON THE NEW AND ENHANCED DERWENT WORLD PATENTS INDEX
PLEASE SEE
http://www.stn-international.de/stndatabases/details/dwpi_r.html <<<

L46 4 SEA FILE=WPIX ABB=ON PLU=ON JAGADEESWA?/AU
L47 2 SEA FILE=WPIX ABB=ON PLU=ON L46 AND (ZEBRAFISH OR COAGULATION)/TI

=> dup rem l5 l19 l34 l41 l47
FILE 'CAPLUS' ENTERED AT 16:18:51 ON 09 MAR 2007
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.

FILE 'MEDLINE' ENTERED AT 16:18:51 ON 09 MAR 2007

FILE 'EMBASE' ENTERED AT 16:18:51 ON 09 MAR 2007

FILE 'BIOSIS' ENTERED AT 16:18:51 ON 09 MAR 2007

FILE 'WPIX' ENTERED AT 16:18:51 ON 09 MAR 2007

PROCESSING COMPLETED FOR L5
PROCESSING COMPLETED FOR L19
PROCESSING COMPLETED FOR L34
PROCESSING COMPLETED FOR L41
PROCESSING COMPLETED FOR L47

L54 39 DUP REM L5 L19 L34 L41 L47 (37 DUPLICATES REMOVED)
ANSWERS '1-13' FROM FILE CAPLUS
ANSWERS '14-25' FROM FILE MEDLINE
ANSWERS '26-28' FROM FILE EMBASE
ANSWERS '29-38' FROM FILE BIOSIS
ANSWER '39' FROM FILE WPIX

=> d ibib ed ab l54 14-38; d ibib ab abex l54 39

L54 ANSWER 14 OF 39 MEDLINE on STN DUPLICATE 2
ACCESSION NUMBER: 2005095356 MEDLINE Full-text
DOCUMENT NUMBER: PubMed ID: 15725906
TITLE: **Zebrafish**: a tool to study hemostasis and **thrombosis**.
AUTHOR: **Jagadeeswaran Pudur**
CORPORATE SOURCE: Department of Cellular and Structural Biology, The University of Texas Health Science Center at San Antonio, 7703 Floyd Curl Drive, San Antonio, TX 78229, USA.. jagadeeswaran@uthscsa.edu
CONTRACT NUMBER: HL63792 (NHLBI)
SOURCE: Current opinion in hematology, (2005 Mar) Vol. 12, No. 2, pp. 149-52. Ref: 4
Journal code: 9430802. ISSN: 1065-6251.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, N.I.H., EXTRAMURAL)
(RESEARCH SUPPORT, U.S. GOV'T, P.H.S.)
General Review; (REVIEW)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200507
ENTRY DATE: Entered STN: 24 Feb 2005
Last Updated on STN: 8 Jul 2005
Entered Medline: 7 Jul 2005
ED Entered STN: 24 Feb 2005
Last Updated on STN: 8 Jul 2005
Entered Medline: 7 Jul 2005
AB PURPOSE OF REVIEW: In the past eight years our laboratory has developed the **zebrafish** model to study hemostasis and **thrombosis** . The purpose of this review is to explore current developments involving the **zebrafish** model in the study of hemostasis and **thrombosis** because the time is now ripe to apply this model to identify novel players that participate in hemostasis and **thrombosis**. RECENT FINDINGS: In the past twelve months, three papers appeared in the hemostasis and **thrombosis** area using the **zebrafish** model. The first one is a review article that summarizes establishment of the **zebrafish** model to study hemostasis and **thrombosis**. The second study is a methodological paper describing assays for measuring hemostasis and **thrombosis** by inducing vascular occlusion in **zebrafish** larvae. The third paper describes a knockdown of **prothrombin** in **zebrafish** , which recapitulates knockout studies in mouse, and marks the beginning of studies in the hemostasis and **thrombosis** area by this new knockdown technology. In addition to the above papers, there is one abstract that describes kinetics of **thrombocyte** and **thrombocyte**-microparticle recruitment in laser-induced arterial **thrombus** formation in **zebrafish**. SUMMARY: With the above advances, the **zebrafish** model has now matured to the point that it can address more important questions in the hemostasis and **thrombosis** area using genetic approaches. This review therefore summarizes the issues described in the above papers along with thoughts about future progress of the **zebrafish** model as a tool to study hemostasis and **thrombosis**.

L54 ANSWER 15 OF 39 MEDLINE on STN DUPLICATE 4
ACCESSION NUMBER: 2005009225 MEDLINE Full-text
DOCUMENT NUMBER: PubMed ID: 15634265
TITLE: **Zebrafish**: a genetic model for hemostasis and **thrombosis**.
AUTHOR: **Jagadeeswaran P**; Gregory M; Day K; Cykowski M; Thattaliyath B
CORPORATE SOURCE: Department of Cellular and Structural Biology, The University of Texas Health Science Center at San Antonio, San Antonio, TX 78229, USA.. jagadeeswar@uthscsa.edu
CONTRACT NUMBER: HL63792 (NHLBI)
SOURCE: Journal of thrombosis and haemostasis : JTH, (2005 Jan) Vol. 3, No. 1, pp. 46-53. Ref: 93
Journal code: 101170508. ISSN: 1538-7933.
PUB. COUNTRY: England: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, N.I.H., EXTRAMURAL)
(RESEARCH SUPPORT, U.S. GOV'T, P.H.S.)
General Review; (REVIEW)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200506
ENTRY DATE: Entered STN: 7 Jan 2005
Last Updated on STN: 22 Jun 2005
Entered Medline: 21 Jun 2005
ED Entered STN: 7 Jan 2005
Last Updated on STN: 22 Jun 2005
Entered Medline: 21 Jun 2005
AB Here we review the **zebrafish** hemostatic system, its relevance to mammalian hemostasis, and its efficacy as a vertebrate genetic model to further the understanding of hemostasis and **thrombosis**.

L54 ANSWER 16 OF 39 MEDLINE on STN DUPLICATE 9
ACCESSION NUMBER: 2002607363 MEDLINE Full-text
DOCUMENT NUMBER: PubMed ID: 12367586
TITLE: Selective labeling of **zebrafish** **thrombocytes**: quantitation of **thrombocyte** function and detection during development.
AUTHOR: Gregory Michael; **Jagadeeswaran Pudur**
CORPORATE SOURCE: Department of Cellular and Structural Biology, The University of Texas Health Science Center at San Antonio, 78229, USA.
CONTRACT NUMBER: HL63792 (NHLBI)
SOURCE: Blood cells, molecules & diseases, (2002 May-Jun) Vol. 28, No. 3, pp. 418-27.
Journal code: 9509932. ISSN: 1079-9796.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, U.S. GOV'T, P.H.S.)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200307
ENTRY DATE: Entered STN: 8 Oct 2002
Last Updated on STN: 15 Jul 2003
Entered Medline: 14 Jul 2003
ED Entered STN: 8 Oct 2002
Last Updated on STN: 15 Jul 2003
Entered Medline: 14 Jul 2003

AB **Zebrafish thrombocytes**, the nucleated equivalents of mammalian platelets, have been characterized morphologically, but knowledge about their developmental synthesis and biochemistry is limited. Given the increasing use of **zebrafish** as a genetic model to study hemostasis, it is important to isolate and study the function of **zebrafish thrombocytes**. Therefore, the objective of this study was to isolate **thrombocytes**, study their function in vitro, and identify the developmental stage at which they enter circulation. To achieve these goals, we developed a method for the selective labeling of **thrombocytes** and assayed these cells for activation by known mammalian platelet agonists. In both in vitro incubations of whole blood and blood labeled in vivo with the lipophilic dye DiI-C(18), we found labeling in only a single population of cells. These cells were identified as **zebrafish thrombocytes** by Wright-Giemsa staining. Using selective DiI-C(18) labeling, we showed the formation of **thrombocyte** aggregates, filopodia, and lipid rafts in response to platelet agonists. Additionally, we showed that aggregates are labeled by binding FITC-conjugated annexin V to exposed phosphatidylserine on the **thrombocyte** membrane. Using these fluorescent-labeling methods, we developed the first microquantitative assay for **thrombocyte** aggregation. With this assay, we provided evidence for the presence of an ADP receptor, P2Y(1), in the **zebrafish thrombocytes**. To study the developmental stage at which **thrombocytes** appear, we microinjected DiI-C(18) into the circulation of **zebrafish** embryos and identified the presence of DiI-C(18)-labeled **thrombocytes** at the 36 h postfertilization stage. These findings will prove helpful in dissecting the functions of **thrombocytes** in hemostasis and provide further insight into the role of platelets in **thrombosis**.

L54 ANSWER 17 OF 39 MEDLINE on STN DUPLICATE 11
ACCESSION NUMBER: 2002720429 MEDLINE Full-text
DOCUMENT NUMBER: PubMed ID: 12482404
TITLE: Comprehensive analysis of blood **coagulation** pathways in teleostei: evolution of **coagulation** factor genes and identification of **zebrafish** factor VIIi.
AUTHOR: Hanumanthaiah Ravikumar; Day Kenneth; **Jagadeeswaran Pudur**
CORPORATE SOURCE: Department of Cellular and Structural Biology, University of Texas Health Science Center, 7703 Floyd Curl Drive, San Antonio, TX 78229, USA.
CONTRACT NUMBER: HL 63792 (NHLBI)
SOURCE: Blood cells, molecules & diseases, (2002 Jul-Aug) Vol. 29, No. 1, pp. 57-68.
Journal code: 9509932. ISSN: 1079-9796.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE) (RESEARCH SUPPORT, U.S. GOV'T, P.H.S.)
LANGUAGE: English
FILE SEGMENT: Priority Journals
OTHER SOURCE: GENBANK-AF515269; GENBANK-AF515270; GENBANK-AF515271; GENBANK-AF515272; GENBANK-AF515273; GENBANK-AF515274; GENBANK-AF515275; GENBANK-AF515276; GENBANK-AF519546
ENTRY MONTH: 200308
ENTRY DATE: Entered STN: 18 Dec 2002
Last Updated on STN: 6 Aug 2003
Entered Medline: 5 Aug 2003
ED Entered STN: 18 Dec 2002
Last Updated on STN: 6 Aug 2003
Entered Medline: 5 Aug 2003
AB It is not clear how the complex mammalian **coagulation** pathways evolved from an entirely dissimilar invertebrate **coagulation** cascade. Comprehensive analysis

of pro-**coagulant** factors and their regulators is lacking in early vertebrates to discern the mechanism of evolution of these genes from the invertebrates. To elucidate the **coagulation** pathways found in early vertebrates, **zebrafish** cDNAs/gene orthologues for major **coagulant**, **anticoagulant**, and fibrinolytic proteins were identified and characterized by homology to mammalian sequences. We found that **zebrafish** carry all hemostatic genes present in mammals, providing evidence that the **coagulation** system of teleosts is nearly identical to mammals. **Zebrafish** factor VII and X genes were identified and analyzed to reveal a novel factor VII-like gene flanked by the factor VII and factor X genes. This gene encodes a protein homologous to factor VII, but lacks critical residues for factor VII activity. Expression of the factor VII-like protein (named factor VIIi) demonstrated that it functions as an inhibitor of blood **coagulation** in biochemical assays using **zebrafish** or human plasmas. Analysis of intergenic DNA between the **zebrafish** VII/VIIi/X gene cluster and a Drosophila trypsin gene cluster revealed significant homology, and based upon these data, we propose a model for a rapid evolution of **coagulation** factors from the invertebrates.

L54 ANSWER 18 OF 39 MEDLINE on STN DUPLICATE 13
ACCESSION NUMBER: 2002136117 MEDLINE Full-text
DOCUMENT NUMBER: PubMed ID: 11831865
TITLE: Developmental expression of vitamin K-dependent gamma-carboxylase activity in **zebrafish** embryos: effect of warfarin.
AUTHOR: Hanumanthaiah R; Thankavel B; Day K; Gregory M; **Jagadeeswaran P**
CORPORATE SOURCE: Department of Cellular and Structural Biology, University of Texas Health Science Center at San Antonio, San Antonio, Texas 78229, USA.
CONTRACT NUMBER: HL63792 (NHLBI)
SOURCE: Blood cells, molecules & diseases, (2001 Nov-Dec) Vol. 27, No. 6, pp. 992-9.
Journal code: 9509932. ISSN: 1079-9796.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, U.S. GOV'T, P.H.S.)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200303
ENTRY DATE: Entered STN: 2 Mar 2002
Last Updated on STN: 31 Mar 2003
Entered Medline: 28 Mar 2003
ED Entered STN: 2 Mar 2002
Last Updated on STN: 31 Mar 2003
Entered Medline: 28 Mar 2003
AB Vitamin K-dependent gamma-carboxylation is an essential posttranslational modification required for the functional activity of **coagulation** proteins such as factors VII, IX, X, and **prothrombin**. Warfarin, an inhibitor of vitamin K-dependent gamma-carboxylation, was used in earlier work on adult **zebrafish** to provide evidence for the presence of vitamin K-dependent carboxylase in **zebrafish**. Here we demonstrate the presence of vitamin K-dependent carboxylase activity in **zebrafish** by directly assaying the microsomal fraction prepared from adult, unfertilized eggs, and embryos from different developmental stages. Gamma-carboxylase activity was detected both before and after fertilization of embryos and the activity levels remained relatively constant from 6 h postfertilization (hpf) through other advanced stages of development. The expression of activity in the early embryos (0-6 hpf) may be due to the presence of maternal protein since the activity was detected even in the unfertilized eggs. Gamma-carboxylase activity in the eggs as well as

early embryos suggested that vitamin K-dependent carboxylase is important throughout development. The detection of vitamin K-dependent carboxylase mRNA by RT-PCR and inhibitor studies using warfarin confirmed these activity results. Further, these studies provide a basis for selecting warfarin-resistant **zebrafish** mutants in order to find genes regulating gamma-carboxylase activity including the yet unidentified vitamin K-epoxide reductase. Copyright 2001 Elsevier Science.

L54 ANSWER 19 OF 39 MEDLINE on STN DUPLICATE 14
ACCESSION NUMBER: 2000505245 MEDLINE Full-text
DOCUMENT NUMBER: PubMed ID: 11054087
TITLE: Haemostatic screening and identification of **zebrafish** mutants with **coagulation** pathway defects: an approach to identifying novel haemostatic genes in man.
AUTHOR: **Jagadeeswaran P**; Gregory M; Johnson S; Thankavel B
CORPORATE SOURCE: Department of Cellular and Structural Biology, The University of Texas Health Science Center at San Antonio, San Antonio, TX 78229, USA.. Jagadeeswar@uthscsa.edu
CONTRACT NUMBER: GM53373 (NIGMS)
SOURCE: British journal of haematology, (2000 Sep) Vol. 110, No. 4, pp. 946-56.
Journal code: 0372544. ISSN: 0007-1048.
PUB. COUNTRY: ENGLAND: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE) (RESEARCH SUPPORT, U.S. GOV'T, P.H.S.)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200011
ENTRY DATE: Entered STN: 22 Mar 2001
Last Updated on STN: 22 Mar 2001
Entered Medline: 9 Nov 2000
ED Entered STN: 22 Mar 2001
Last Updated on STN: 22 Mar 2001
Entered Medline: 9 Nov 2000
AB **Zebrafish** were used as a model to study haemostasis, a vertebrate function of paramount importance. A limitation of the **zebrafish** model is the difficulty in assaying small amounts of blood to detect **coagulation** mutants. We report the use of a rapid total **coagulation** activity (TCA) assay to screen for **coagulation** defects in individual adult **zebrafish**. We screened the TCA in 1000 gynogenetic half-tetrad diploids derived from 86 clutches. Each clutch was from a single F1 female offspring of males mutagenized with ethylnitrosourea (ENU). We found 30-50% defective **zebrafish** among six clutches, consistent with a heritable defect. The assay developed here provided a rapid screen to detect overall **coagulation** defects. However, because of the limited amounts of plasma, we could not detect defects in specific pathways. Therefore, a novel, ultra-sensitive kinetic method was developed to identify specific pathway defects. To test whether the kinetic assay could be used as a screening tool, 1500 Florida wild-type **zebrafish** pairs were analysed for naturally occurring **coagulation** defects. We detected 30 fish with extrinsic pathway defects, but with intact common and intrinsic pathways. We conclude that it is now possible to identify specific **coagulation** pathway defects in **zebrafish**.

L54 ANSWER 20 OF 39 MEDLINE on STN DUPLICATE 16
ACCESSION NUMBER: 2000074628 MEDLINE Full-text
DOCUMENT NUMBER: PubMed ID: 10606877

TITLE: Identification and characterization of **zebrafish thrombocytes.**
AUTHOR: **Jagadeeswaran P**; Sheehan J P; Craig F E; Troyer D
CORPORATE SOURCE: Department of Cellular Biology, The University of Texas Health Science Center, 7703 Floyd Curl Drive, San Antonio, TX 78284, USA.
CONTRACT NUMBER: GM 53373 (NIGMS)
HL 02923 (NHLBI)
SOURCE: British journal of haematology, (1999 Dec) Vol. 107, No. 4, pp. 731-8.
Journal code: 0372544. ISSN: 0007-1048.
PUB. COUNTRY: ENGLAND: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, NON-U.S. GOV'T)
(RESEARCH SUPPORT, U.S. GOV'T, P.H.S.)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200002
ENTRY DATE: Entered STN: 18 Feb 2000
Last Updated on STN: 18 Feb 2000
Entered Medline: 10 Feb 2000
ED Entered STN: 18 Feb 2000
Last Updated on STN: 18 Feb 2000
Entered Medline: 10 Feb 2000
AB To analyse primary haemostasis in the **zebrafish** we have identified and characterized the **zebrafish thrombocyte** by morphologic, immunologic and functional approaches. Novel methods were developed for harvesting **zebrafish** blood with preservation of **thrombocytes**, and assaying whole blood adhesion/aggregation responses in microtitre plates. Light and electron microscopy of the **thrombocyte** illustrated morphological characteristics including the formation of aggregates, pseudopodia, and surface-connected vesicles analagous to the platelet canalicular system. Immunostaining with polyclonal antisera versus human platelet glycoproteins demonstrated the presence of glycoprotein Ib and IIb/IIIa-like complexes on the **thrombocyte** surface. Whole blood assays for adhesion/aggregation and ATP release showed ristocetin-induced adhesion without ATP release, and platelet agonist (collagen, arachidonic acid) induced aggregation with ATP release. Blood harvested from **zebrafish** treated with aspirin demonstrated inhibition of arachidonic acid induced aggregation and agonist induced ATP release, consistent with at least partial dependence on an intact cyclo oxygenase pathway. The combined morphologic immunologic and functional evidence suggest that the **zebrafish thrombocyte** is the haemostatic homologue of the mammalian platelet. Conservation of major haemostatic pathways involved in platelet function and **coagulation** suggests that the **zebrafish** is a relevant model for mammalian haemostasis and **thrombosis.**

L54 ANSWER 21 OF 39 MEDLINE on STN DUPLICATE 17
ACCESSION NUMBER: 2000042803 MEDLINE Full-text
DOCUMENT NUMBER: PubMed ID: 10575549
TITLE: Analysis of blood **coagulation** in the **zebrafish.**
AUTHOR: **Jagadeeswaran P**; Sheehan J P
CORPORATE SOURCE: Department of Cellular and Structural Biology, University of Texas Health Science Center at San Antonio 78284, USA.. jagadeeswar@uthscsa.edu
CONTRACT NUMBER: GM 53373 (NIGMS)
HL 02923 (NHLBI)
SOURCE: Blood cells, molecules & diseases, (1999 Jun-Aug) Vol. 25, No. 3-4, pp. 239-49.

Journal code: 9509932. ISSN: 1079-9796.
PUB. COUNTRY: United States
DOCUMENT TYPE: (COMPARATIVE STUDY)
Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, NON-U.S. GOV'T)
(RESEARCH SUPPORT, U.S. GOV'T, P.H.S.)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199912
ENTRY DATE: Entered STN: 13 Jan 2000
Last Updated on STN: 13 Jan 2000
Entered Medline: 29 Dec 1999
ED Entered STN: 13 Jan 2000
Last Updated on STN: 13 Jan 2000
Entered Medline: 29 Dec 1999
AB The **zebrafish** (Danio rerio) is a unique animal model in which saturation mutagenesis has been used to identify genes involved in vertebrate development. The relevance of the **zebrafish** as a genetic model for hemostasis depends, in large part, on the degree of similarity between the **zebrafish** and mammalian systems. The diminutive size of the **zebrafish** poses technical problems for analysis of **coagulation**. This study describes methods to obtain citrated whole blood and plasma from the **zebrafish**, analyze in vitro **coagulation** in small plasma volumes, obtain uniform dosing of **zebrafish** with oral **anticoagulants**, and demonstrate specific factor activities via chromogenic assays. Analysis of the **zebrafish** system demonstrates the presence of both the intrinsic and extrinsic pathways of **coagulation**, evidence for **prothrombin**, factor X, protein C, **antithrombin**, and heparin cofactor II activity, and a requirement for vitamin K dependent gamma-carboxylation of **zebrafish** hemostatic proteins. Induction of a morphologically recognizable bleeding phenotype by warfarin treatment is also demonstrated. Characterization of **zebrafish coagulation** provides evidence that major hemostatic pathways are conserved between **zebrafish** and man. These similarities indicate that the **zebrafish** is a relevant genetic model for identification of novel genes involved in hemostasis and **thrombosis**.

L54 ANSWER 22 OF 39 MEDLINE on STN DUPLICATE 20
ACCESSION NUMBER: 97358654 MEDLINE Full-text
DOCUMENT NUMBER: PubMed ID: 9215750
TITLE: A hemophilia model in **zebrafish**: analysis of hemostasis.
AUTHOR: **Jagadeeswaran P**; Liu Y C
CORPORATE SOURCE: Department of Cellular and Structural Biology, The University of Texas Health Science Center at San Antonio, 78284-7964, USA.. jagadeeswar@uthscsa.edu
SOURCE: Blood cells, molecules & diseases, (1997) Vol. 23, No. 1, pp. 52-7.
Journal code: 9509932. ISSN: 1079-9796.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199710
ENTRY DATE: Entered STN: 21 Oct 1997
Last Updated on STN: 29 Jan 1999
Entered Medline: 3 Oct 1997
ED Entered STN: 21 Oct 1997
Last Updated on STN: 29 Jan 1999
Entered Medline: 3 Oct 1997

AB We have developed artificial hemophilia in **zebrafish** by treating them with copper and measured their clotting function by a newly developed sensitive clotting time assay. The clotting function can be detected rapidly and reliably in 30 hr larvae and in adult fish by measuring the blood clotting time. We have used this assay to screen wild type **zebrafish** and identified fish with prolonged clotting time. This verifies the usefulness of this assay in future screening for recessive hemostasis defects generated by chemical and radiation mutagenesis methods.

L54 ANSWER 23 OF 39 MEDLINE on STN
ACCESSION NUMBER: 2006574161 MEDLINE Full-text
DOCUMENT NUMBER: PubMed ID: 17003448
TITLE: The **Zebrafish** fade out mutant: a novel genetic model for Hermansky-Pudlak syndrome.
AUTHOR: Bahadori Ronja; Rinner Oliver; Schonthaler Helia Berrit; Biehlmaier Oliver; Makhankov Yuri V; Rao Prashanth; **Jagadeeswaran Pudur**; Neuhauss Stephan C F
CORPORATE SOURCE: Swiss Federal Institute of Technology (ETH), Department of Biology, and Brain Research Institute, University of Zurich, Zurich, Switzerland.
SOURCE: Investigative ophthalmology & visual science, (2006 Oct) Vol. 47, No. 10, pp. 4523-31.
Journal code: 7703701. ISSN: 0146-0404.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE) (RESEARCH SUPPORT, NON-U.S. GOV'T)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200610
ENTRY DATE: Entered STN: 28 Sep 2006
Last Updated on STN: 25 Oct 2006
Entered Medline: 24 Oct 2006
ED Entered STN: 28 Sep 2006
Last Updated on STN: 25 Oct 2006
Entered Medline: 24 Oct 2006
AB PURPOSE: To characterize retinal morphology and visual system function in the **zebrafish** mutant fade out (fad) and to establish the mutant as a lower vertebrate model for Hermansky-Pudlak syndrome (HPS). METHODS: Retinal morphology of fad larvae was examined between 3 and 9 days postfertilization (dpf) by standard histology, transmission electron microscopy, and immunohistochemistry examination. Apoptotic cells were visualized by TdT-mediated dUTP nick-end labeling (TUNEL) staining. Visual system function was probed by electroretinography and behavioral assessment by optokinetic response measurements. Blood clotting was evaluated by time to occlusion testing of blood vessels as an arterial **thrombosis** assay. The chromosomal location of fad was determined by simple sequence-length polymorphism mapping. Genomic fragments of candidate genes were cloned by standard molecular techniques and mapped to the **zebrafish** genome by radiation hybrid mapping. RESULTS: Mutant fad larvae are hypopigmented and show structural defects in the outer retina. Melanosomes of these larvae in the retinal pigment epithelium are hypopigmented, generally smaller, and progressively reduced in number compared to nonmutant larvae. Progressive microvilli protrusions into the photoreceptor cell layer are not detectable, and photoreceptor outer segments get shorter and are misaligned. Photoreceptors subsequently undergo apoptosis, with a peak of cell death at 6 dpf. Electrical responses of the retina and visual performance are severely reduced. Blood clotting is prolonged in mutant fad larvae. Genomic mapping of fad reveals distinct genomic positions of the mutant gene from known human HPS genes. CONCLUSIONS: The fad mutant shows syndromic defects in pigmentation, outer retinal

structure and function, and blood clotting. This syndrome is characteristic of Hermansky-Pudlak syndrome (HPS), making fad a novel genetic model of HPS. The gene does not cosegregate with the known human HPS genes, suggesting a novel molecular cause of HPS.

L54 ANSWER 24 OF 39 MEDLINE on STN
ACCESSION NUMBER: 2006651916 MEDLINE Full-text
DOCUMENT NUMBER: PubMed ID: 17085812
TITLE: Laser-induced **thrombosis** in **zebrafish** larvae: a novel genetic screening method for **thrombosis**.
AUTHOR: **Jagadeeswaran Pudur**; Paris Ryan; Rao Prashanth
CORPORATE SOURCE: Department of Cellular and Structural Biology, The University of Texas Health Science Center at San Antonio, USA.
CONTRACT NUMBER: HL63792 (NHLBI)
HL77910 (NHLBI)
SOURCE: Methods in molecular medicine, (2006) Vol. 129, pp. 187-95. Journal code: 101123138. ISSN: 1543-1894.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE) (RESEARCH SUPPORT, N.I.H., EXTRAMURAL)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200612
ENTRY DATE: Entered STN: 7 Nov 2006
Last Updated on STN: 21 Dec 2006
Entered Medline: 20 Dec 2006
ED Entered STN: 7 Nov 2006
Last Updated on STN: 21 Dec 2006
Entered Medline: 20 Dec 2006
AB Classical genetic approaches to study hemostasis and **thrombosis** have not been available until our recent introduction of the teleost, Danio rerio (the **zebrafish**), as an effective genetic model for in vivo **coagulation** assays. The genetic screen for this model is carried out using the genome saturation mutagenesis approach. The resulting mutants are screened for hemostatic or **thrombotic** defects. We developed a global physiological screening method for **thrombosis** by utilizing a laser to induce **thrombosis** in a specifically targeted area of the major artery and vein. Using this assay, we have screened many fish for abnormal hemostasis, and have isolated a number of mutants with abnormal **coagulation** parameters. These mutants can be grown, bred, and further evaluated for the genetic etiology of their abnormal hemostatic pathways.

L54 ANSWER 25 OF 39 MEDLINE on STN
ACCESSION NUMBER: 2004627528 MEDLINE Full-text
DOCUMENT NUMBER: PubMed ID: 15602889
TITLE: Vascular occlusion and **thrombosis** in **zebrafish**.
AUTHOR: **Jagadeeswaran Pudur**; Cykowski Matthew; Thattaliyath Bijoy
CORPORATE SOURCE: Department of Cellular and Structural Biology, The University of Texas Health Science Center at San Antonio, San Antonio, Texas 78229, USA.
SOURCE: Methods in cell biology, (2004) Vol. 76, pp. 489-500. Journal code: 0373334. ISSN: 0091-679X.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)

LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200503
ENTRY DATE: Entered STN: 20 Dec 2004
Last Updated on STN: 16 Mar 2005
Entered Medline: 15 Mar 2005
ED Entered STN: 20 Dec 2004
Last Updated on STN: 16 Mar 2005
Entered Medline: 15 Mar 2005

L54 ANSWER 26 OF 39 EMBASE COPYRIGHT (c) 2007 Elsevier B.V. All rights reserved on STN
ACCESSION NUMBER: 2005555032 EMBASE Full-text
TITLE: A green light for the **thrombopoietic** program.
AUTHOR: **Jagadeeswaran P.**
CORPORATE SOURCE: P. Jagadeeswaran, University of North Texas
SOURCE: Blood, (1 Dec 2005) Vol. 106, No. 12, pp. 3684. .
Refs: 2
ISSN: 0006-4971 CODEN: BLOOAW
COUNTRY: United States
DOCUMENT TYPE: Journal; General Review
FILE SEGMENT: 025 Hematology
LANGUAGE: English
SUMMARY LANGUAGE: English
ENTRY DATE: Entered STN: 19 Jan 2006
Last Updated on STN: 19 Jan 2006
ED Entered STN: 19 Jan 2006
Last Updated on STN: 19 Jan 2006
AB The opportunity to study the dynamics of **thrombopoeisis** in real time has long been awaited.

L54 ANSWER 27 OF 39 EMBASE COPYRIGHT (c) 2007 Elsevier B.V. All rights reserved on STN
ACCESSION NUMBER: 2004100051 EMBASE Full-text
TITLE: Annual Fish as a Genetic Model for Aging.
AUTHOR: Herrera M.; **Jagadeeswaran P.**
CORPORATE SOURCE: Dr. P. Jagadeeswaran, Dept. Cell./Struct. Biol.-MSC 7762, Univ. of Texas Health Science Center, 7703 Floyd Curl Drive, San Antonio, TX 78229-3900, United States. Jagadeeswar@uthscsa.edu
SOURCE: Journals of Gerontology - Series A Biological Sciences and Medical Sciences, (2004) Vol. 59, No. 2, pp. 101-107. .
Refs: 27
ISSN: 1079-5006 CODEN: JGASFW
COUNTRY: United States
DOCUMENT TYPE: Journal; Article
FILE SEGMENT: 020 Gerontology and Geriatrics
021 Developmental Biology and Teratology
022 Human Genetics
LANGUAGE: English
SUMMARY LANGUAGE: English
ENTRY DATE: Entered STN: 18 Mar 2004
Last Updated on STN: 18 Mar 2004
ED Entered STN: 18 Mar 2004
Last Updated on STN: 18 Mar 2004
AB Advancement in the genetics of aging and identification of longevity genes has been largely due to the model organisms such as Caenorhabditis elegans and Drosophila melanogaster. However, knowledge gained from these invertebrates will not be able to identify vertebrate-specific longevity genes. The mouse

has a relatively long life span of about 3 years, which limits its utility for screening of longevity genes. Fish have been used in aging studies. However, systematic comparison of survivorship curves for fish is lacking. In this study, we compared the survivorship curves of zebrafish and 2 different annual fish, namely, Cynolebias nigripinnis and Nothobranchius rachovii. These studies established that Nothobranchius rachovii has the shortest life span (8.5 months, at which time 10% of population remains). We also established that it is possible to breed Nothobranchius rachovii under laboratory conditions, and showed that their embryos can be stored for several months and hatched at any time by adding water. In addition, we have isolated 31 cDNA markers out of 71 attempted amplifications based on corresponding homologous genomic sequences in zebrafish and Fugu available from public databases, suggesting that approximately 40% of the genes from Nothobranchius rachovii could be easily isolated. Thus, the ability to be bred under laboratory conditions and the availability of cDNA markers for mapping, along with the major advantage of a relatively short life span, make Nothobranchius rachovii an attractive vertebrate genetic model for aging over other available vertebrate models.

L54 ANSWER 28 OF 39 EMBASE COPYRIGHT (c) 2007 Elsevier B.V. All rights reserved on STN

ACCESSION NUMBER: 2002378726 EMBASE Full-text
TITLE: Selective labeling of zebrafish **thrombocytes**: Quantitation of **thrombocyte** function and detection during development.
AUTHOR: Gregory M.; **Jagadeeswaran P.**
CORPORATE SOURCE: M. Gregory, Department of Cellular Biology, Univ. of Texas Health Science Center, 7703 Floyd Curl Drive, San Antonio, TX 78229, United States. Jagadeeswar@uthscsa.edu
SOURCE: Blood Cells, Molecules, and Diseases, (2002) Vol. 29, No. 3, pp. 418-427. .
Refs: 15
ISSN: 1079-9796 CODEN: BCMDFX
COUNTRY: United States
DOCUMENT TYPE: Journal; Article
FILE SEGMENT: 029 Clinical Biochemistry
LANGUAGE: English
SUMMARY LANGUAGE: English
ENTRY DATE: Entered STN: 7 Nov 2002
Last Updated on STN: 7 Nov 2002
ED Entered STN: 7 Nov 2002
Last Updated on STN: 7 Nov 2002

AB Zebrafish **thrombocytes**, the nucleated equivalents of mammalian platelets, have been characterized morphologically, but knowledge about their developmental synthesis and biochemistry is limited. Given the increasing use of zebrafish as a genetic model to study hemostasis, it is important to isolate and study the function of zebrafish **thrombocytes**. Therefore, the objective of this study was to isolate **thrombocytes**, study their function in vitro, and identify the developmental stage at which they enter circulation. To achieve these goals, we developed a method for the selective labeling of **thrombocytes** and assayed these cells for activation by known mammalian platelet agonists. In both in vitro incubations of whole blood and blood labeled in vivo with the lipophilic dye (DiI-C(18), we found labeling in only a single population of cells. These cells were identified as zebrafish **thrombocytes** by Wright-Giemsa staining. Using selective DiI-C(18) labeling, we showed the formation of **thrombocyte** aggregates, filopodia, and lipid rafts in response to platelet agonists. Additionally, we showed that aggregates are labeled by binding FITC-conjugated annexin V to exposed phosphatidylserine on the **thrombocyte** membrane. Using these fluorescent-labeling methods, we developed the first

microquantitative assay for **thrombocyte** aggregation. With this assay, we provided evidence for the presence of an ADP receptor, P2Y(1), in the zebrafish **thrombocytes**. To study the developmental stage at which **thrombocytes** appear, we microinjected DiI-C(18) into the circulation of zebrafish embryos and identified the presence of DiI-C(18)-labeled **thrombocytes** at the 36 h postfertilization stage. These findings will prove helpful in dissecting the functions of **thrombocytes** in hemostasis and provide further insight into the role of platelets in **thrombosis** . .COPYRGT. 2002 Elsevier Science (USA).

L54 ANSWER 29 OF 39 BIOSIS COPYRIGHT (c) 2007 The Thomson Corporation on STN

ACCESSION NUMBER: 2007:101569 BIOSIS Full-text
DOCUMENT NUMBER: PREV200700098323
TITLE: Laser-induced **thrombosis** in **zebrafish** larvae - A novel genetic screening method for **thrombosis**.
AUTHOR(S): **Jagadeeswaran, Pudur** [Reprint Author]; Paris, Ryan; Rao, Prashanth
CORPORATE SOURCE: Univ Texas, Hlth Sci Ctr, Dept Cellular and Struct Biol, San Antonio, TX 78284 USA
SOURCE: Wang, QK [Editor]. (2006) pp. 187-195. Methods in Molecular Medicine.
Publisher: HUMANA PRESS INC, 999 RIVERVIEW DR, STE 208, TOTOWA, NJ 07512-1165 USA. Series: METHODS IN MOLECULAR MEDICINE.
ISSN: 1543-1894. ISBN: 1-58829-892-2(H).
DOCUMENT TYPE: Book; (Book Chapter)
LANGUAGE: English
ENTRY DATE: Entered STN: 7 Feb 2007
Last Updated on STN: 7 Feb 2007
ED Entered STN: 7 Feb 2007
Last Updated on STN: 7 Feb 2007
AB Classical genetic approaches to study hemostasis and **thrombosis** have not been available until our recent introduction of the teleost, **Danio rerio** (the **zebrafish**), as an effective genetic model for in vivo coagulation assays. The genetic screen for this model is carried out using the genome saturation mutagenesis approach. The resulting mutants are screened for hemostatic or **thrombotic** defects. We developed a global physiological screening method for **thrombosis** by utilizing a laser to induce **thrombosis** in a specifically targeted area of the major artery and vein. Using this assay, we have screened many fish for abnormal hemostasis, and have isolated a number of mutants with abnormal coagulation parameters. These mutants can be grown, bred, and further evaluated for the genetic etiology of their abnormal hemostatic pathways..

L54 ANSWER 30 OF 39 BIOSIS COPYRIGHT (c) 2007 The Thomson Corporation on STN

ACCESSION NUMBER: 2006:12351 BIOSIS Full-text
DOCUMENT NUMBER: PREV200600028249
TITLE: Vascular occlusion and **thrombosis** in **zebrafish**.
AUTHOR(S): **Jagadeeswaran, Pudur** [Reprint Author]; Cykowski, Matthew; Thattaliyath, Bijoy
CORPORATE SOURCE: Univ Texas, Hlth Sci Ctr, Dept Cellular and Struct Biol, 7703 Floyd Curl Dr, San Antonio, TX 78229 USA
SOURCE: Detrich, HW [Editor]; Westerfield, M [Editor]; Zon, LI [Editor]. Methods Cell Biol., (2004) pp. 489-500. Methods

in Cell Biology.
Publisher: ELSEVIER ACADEMIC PRESS INC, 525 B STREET, SUITE 1900, SAN DIEGO, CA 92101-4495 USA. Series: METHODS IN CELL BIOLOGY.
CODEN: MCBLAG. ISSN: 0091-679X. ISBN: 0-12-564171-0(H).
DOCUMENT TYPE: Book; (Book Chapter)
LANGUAGE: English
ENTRY DATE: Entered STN: 21 Dec 2005
Last Updated on STN: 21 Dec 2005
ED Entered STN: 21 Dec 2005
Last Updated on STN: 21 Dec 2005

L54 ANSWER 31 OF 39 BIOSIS COPYRIGHT (c) 2007 The Thomson Corporation on STN
ACCESSION NUMBER: 2005:478689 BIOSIS Full-text
DOCUMENT NUMBER: PREV200510270593
TITLE: Kinetics of **thrombocyte** and **thrombocyte** -microparticle recruitment in laser induced arterial **thrombus** formation in **zebrafish**.
AUTHOR(S): **Jagadeeswaran, Pudur** [Reprint Author]; Cykowski, Matthew; Thattaliyath, Bijoy
CORPORATE SOURCE: Univ Texas, Hlth Sci Ctr, San Antonio, TX 78285 USA
SOURCE: Blood, (NOV 16 2004) Vol. 104, No. 11, Part 1, pp. 717A. Meeting Info.: 46th Annual Meeting of the American-Society-of-Hematology. San Diego, CA, USA. December 04 -07, 2004. Amer Soc Hematol.
CODEN: BLOOAW. ISSN: 0006-4971.
DOCUMENT TYPE: Conference; (Meeting)
Conference; Abstract; (Meeting Abstract)
LANGUAGE: English
ENTRY DATE: Entered STN: 16 Nov 2005
Last Updated on STN: 16 Nov 2005
ED Entered STN: 16 Nov 2005
Last Updated on STN: 16 Nov 2005
AB We have been using **zebrafish** as a genetic model to study hemostasis and **thrombosis**. In this pursuit, we studied the initial events in **thrombus** formation in a laser induced arterial **thrombus** formation. First, we identified in **zebrafishblood** microparticles that have membrane proteins similar to those found in **thrombocytes**. We have then shown that in Weinstein transgenic line (where endothelial cells are labeled with GFP using fli-1 promoter) **thrombocytes** were also labeled with the GFP. In this line, we found two populations of GFP positive **thrombocytes** one that is more intense and larger in size than the other and others were of intermediate intensities and sizes. In Weinstein line as well as in Hardin transgenic line which carries exclusively GFP labeled **thrombocytes** (driven under GpIIb promoter), we found GFP labeled microparticles. The GFP microparticles in both lines were similar in numbers suggesting that **thrombocytes** are generating more microparticles. They ranged in size between 0.2 to 0.8 microns. **Thrombin** and collagen treatment of **thrombocytes** increased the generationof microparticles. We also found that the microparticles agglutinated in a vWF dependent fashion.In Lin transgenic line (where mostly red cells are labeled with GFP using GATA-I promoter), we found a small percentage of **thrombocytes** were also labeled with GFP (corresponding to less intense GFP **thrombocytes** in Weinstein line). By using the microparticles from Lin and Weinstein lines, we found that the agglutinates contained, **thrombocyte** microparticles, and to a larger extent red cellmicroparticles. By labeling the **thrombocyte** microparticles with DiI-C-18 (a dye that selectively labels approximately 10% of **thrombocytes** at defined concentration), we found that microparticles accumulated first at the siteof injury. Intravenous pan-caspase inhibitor (z-VAD-FMK) injections in **zebrafish** resulted in significant reduction of microparticles and prolongation of time

to adherence in laser induced **thrombosis** assay.In Weinstein line we noted that less intense GFP **thrombocytes** were more intensely labeled with DiI-C-18. We defined DiI-C-18 +ve **thrombocytes** as young **thrombocytes** and found that expression of GPIb, and GPIIb/IIIa on native **thrombocytes** and P-selectin, annexin V and calcium levels after **thrombocyte** activation were higher in young **thrombocytes** compared to mature DiI-C-18 -ve **thrombocytes**. We also found that in an aggregation reaction, young and mature **thrombocytes** formed independent clusters with a preference for formation of young clusters first. By using dye labeling methods as well as above transgenic lines we showed that on laser induced arterial injury young **thrombocytes** initiated arterial **thrombus** formation.To identify novel differences between the two populations of **thrombocytes**, we performed microarray analysis on **thrombocyte** RNA using a control red cell RNA and found approximately 100 five-fold upregulated genes in **thrombocytes** compared to red cells. These included genes such as xfo-6. We are currently studyingthe gene expression differences between the two **thrombocyte** populations.In summary, we found that microparticles adhere first to sub-endothelial matrix followed by young **thrombocyte** clustering and later by mature and young **thrombocytes** clusters in growing **thrombus**. The knowledge on the differences betweenthe **thrombocyte** populations and their microparticles as well as their recruitment into **thrombus**, might provide insight into **thrombus** formation in mammals and may suggest novel **antithrombotic** targets.

L54 ANSWER 32 OF 39 BIOSIS COPYRIGHT (c) 2007 The Thomson Corporation on STN

ACCESSION NUMBER: 2001:257611 BIOSIS Full-text
DOCUMENT NUMBER: PREV200100257611
TITLE: **Zebrafish**: A genetic model for vascular occlusion.
AUTHOR(S): Gregory, Michael Joseph [Reprint author]; **Jagadeeswaran, Pudur** [Reprint author]
CORPORATE SOURCE: Cellular and Structural Biology, University of Texas Health Science Center at San Antonio, 7703 Floyd Curl Dr., San Antonio, TX, 78229, USA
SOURCE: FASEB Journal, (March 8, 2001) Vol. 15, No. 5, pp. A1102. print.
Meeting Info.: Annual Meeting of the Federation of American Societies for Experimental Biology on Experimental Biology 2001. Orlando, Florida, USA. March 31-April 04, 2001.
CODEN: FAJOEC. ISSN: 0892-6638.
DOCUMENT TYPE: Conference; (Meeting)
Conference; Abstract; (Meeting Abstract)
LANGUAGE: English
ENTRY DATE: Entered STN: 30 May 2001
Last Updated on STN: 19 Feb 2002

ED Entered STN: 30 May 2001
Last Updated on STN: 19 Feb 2002

AB Virchow postulated that **thrombosis** occurs due to abnormalities in the properties of blood, vessel wall and blood flow. Despite extensive in vitro characterization of blood coagulation, the actual pathological process of **thrombosis** in vivo is still elusive. Current animal models of vascular occlusion have focused on the mechanisms of **thrombus** formation and lysis as well as the effects of pharmaceutical agents, but have not been used as a genetic screen for hypo- or hypercoagulable stages. In this abstract, we report on the use of **zebrafish** as a model to study in vivo vascular occlusion. Our laboratory has previously shown the relevance of **zebrafish** to mammalian hemostasis. We show that ferric chloride (FeCl3) and phenylhydrazine (PHZ) cause vascular occlusion in **zebrafish** larvae and the time to occlusion (TTO) can be reliably and rapidly detected. Vascular occlusion was induced by FeCl3 and PHZ in either the sinus venosus of the yolk sac or caudal artery depending

on the developmental stage of the larvae. To demonstrate that the occlusive event is due to a clot formation, we have sectioned larvae after chemical treatment and found evidence for fibrin deposition and platelet activation. To use this assay as a genetic screen, we have generated gynogentic diploid embryos from Florida wild-type **zebrafish** by early pressure treatment of eggs fertilized with UV-treated sperm. Screening of these larvae have indentified several batches with significantly prolonged TTO. This constitutes the first embryonic screen for vascular occlussion in **zebrafish** and should be useful in the determination of plasmatic or cellular elements involved in in vivo vascular occlusion as well as the identification of novel genes involved in in vivo **thrombosis** formation.

L54 ANSWER 33 OF 39 BIOSIS COPYRIGHT (c) 2007 The Thomson Corporation on STN

ACCESSION NUMBER: 2002:198913 BIOSIS Full-text
DOCUMENT NUMBER: PREV200200198913
TITLE: Characterization of cDNAs of blood coagulation pathway proteins in **zebrafish**.
AUTHOR(S): Hanumanthaiah, Ravikumar [Reprint author]; Day, Kenneth [Reprint author]; **Jagadeeswaran, Pudur** [Reprint author]
CORPORATE SOURCE: Cellular and Structural Biology, University of Texas Health Science Center, San Antonio, TX, USA
SOURCE: Blood, (November 16, 2001) Vol. 98, No. 11 Part 1, pp. 529a. print.
Meeting Info.: 43rd Annual Meeting of the American Society of Hematology, Part 1. Orlando, Florida, USA. December 07-11, 2001. American Society of Hematology.
CODEN: BLOOAW. ISSN: 0006-4971.
DOCUMENT TYPE: Conference; (Meeting)
Conference; Abstract; (Meeting Abstract)
Conference; (Meeting Poster)
LANGUAGE: English
ENTRY DATE: Entered STN: 20 Mar 2002
Last Updated on STN: 20 Mar 2002
ED Entered STN: 20 Mar 2002
Last Updated on STN: 20 Mar 2002

AB Blood coagulation in mammals is regulated by several procoagulant, **anticoagulant** and fibrinolytic proteins. Previous biochemical assays conducted in our laboratory revealed parallels in **zebrafish** and mammalian coagulation. We have also reported earlier the isolation of **zebrafish** cDNAs for prothrombin, factor VII, factor VII like protein, plasminogen precursor, heparin cofactor II, and factor V and characterization of gene structures for factor VII and factor VII like proteins. In this abstract, we report full-length **zebrafish** cDNAs for factor X, GAS-6, **antithrombin**, and TEPI and a partial cDNA for factor IX. The predicted protein sequences derived from these cDNAs revealed remarkable homologies to the corresponding mammalian members. The arrangement of GAS-6, factor VII, factor VII like and factor X genes in the **zebrafish** linkage group was determined and found to be syntenic to that found in humans. Taken together these data provide evidence for the conserved coagulant, **anticoagulant** and fibrinolytic proteins in **zebrafish** and add credence to **zebrafish** model for studying mammalian hemostasis. BLAST search analysis of the factor VII like protein sequences with the human genome sequence identified a human orthologue for this protein. The analysis of intergenic DNA of **zebrafish** factor VII genes revealed significant sequence similarities to the intergenic DNA of Drosophila trypsin genes. The finding of factor VII gene duplications in **zebrafish** along with the conserved homologies of the intergenic DNA between Drosophila trypsin genes and **zebrafish** factor VII genes, suggests that multiple copies of serine protease

modules might have been inserted in concert to the preexisting Gla-EGF domains by either gene duplication or gene conversion.

L54 ANSWER 34 OF 39 BIOSIS COPYRIGHT (c) 2007 The Thomson Corporation on STN

ACCESSION NUMBER: 2002:241416 BIOSIS Full-text
DOCUMENT NUMBER: PREV200200241416
TITLE: Production and characterization of transgenic **zebrafish** (Danio rario) with fluorescent **thrombocytes** and **thrombocyte** precursors.
AUTHOR(S): Lin, Hui-Feng [Reprint author]; Paw, Barry H. [Reprint author]; Gregory, Michael; **Jagadeeswaran, Pudur**; Handin, Robert I. [Reprint author]
CORPORATE SOURCE: Medicine/Hematology, Brigham and Women's Hospital, Boston, MA, USA
SOURCE: Blood, (November 16, 2001) Vol. 98, No. 11 Part 1, pp. 514a. print.
Meeting Info.: 43rd Annual Meeting of the American Society of Hematology, Part 1. Orlando, Florida, USA. December 07-11, 2001. American Society of Hematology.
CODEN: BLOOAW. ISSN: 0006-4971.
DOCUMENT TYPE: Conference; (Meeting)
Conference; Abstract; (Meeting Abstract)
Conference; (Meeting Poster)
LANGUAGE: English
ENTRY DATE: Entered STN: 17 Apr 2002
Last Updated on STN: 17 Apr 2002
ED Entered STN: 17 Apr 2002
Last Updated on STN: 17 Apr 2002

AB The **zebrafish** (Danio rario) has emerged as a useful animal model in which to study the genes involved in tissue and cellular development. With the **zebrafish**, one can observe cell and tissue development within optically clear embryos and carry out saturation mutagenesis to produce a large number of mutant phenotypes. A large number of fish with defects in erythroid development have been detected in previous developmental screens. Screening for red cell defects is quite easy, as circulating red cells are large, abundant and readily visible by light microscopy. Study of the other formed elements of the blood requires more sophisticated and more sensitive detection methods. We have previously shown that **Zebrafish thrombocytes** express the GpIIb/IIIa (alphaIIb/beta3) integrin complex and have used the technique of in situ hybridization with an alphaIIb subunit probe to demonstrate the presence of circulating **thrombocytes** in developing embryos. In order to facilitate the study of **thrombocyte** development and function, we have now produced transgenic fish lines with circulating fluorescent **thrombocytes**. These lines were developed by injecting single cell embryos with DNA containing alphaIIb promoter element sequences of varying length linked to a green fluorescent protein (GFP) reporter gene. We then screened developing embryos for the presence of GFP-positive **thrombocytes**, raised the resulting fish to sexual maturity and screened their offspring to identify founder fish with germ-line transmission of GFP-positive **thrombocytes**. To date, we have generated 6 lines from a 1.7 kb promoter element, two GFP-expressing lines from a 3 kb promoter and 2 lines from a 6 kb promoter. Circulating fluorescent cells are detected 42-48 hours post fertilization (hpf) in embryos derived from the transgenic fish. The level of expression varies with the length of the promoter element and the site of transgene integration. GFP-positive cells from transgenic fish have the morphologic characteristics of **zebrafish thrombocytes** including the formation of pseudopodia when activated. Fluorescent **thrombocytes** were also identified by flow cytometry and stained with an anti-human GpIIb/IIIa antibody which cross-reacts with the **zebrafish** protein. In addition,

following vascular injury to embryos or adult fish with ferric chloride, fluorescent **thrombocytes** are seen to adhere to the vessel wall and form aggregates. Fluorescent **thrombocytes** also form aggregates in vitro in response to adenosine diphosphate. The availability of transgenic fish lines with GFP-expressing **thrombocytes** should facilitate developmental screens aimed at discovering genes critical for **thrombocyte** differentiation and function. In addition, these transgenic fish may provide a novel way to study platelet-platelet and platelet-vessel wall interactions in intact living fish.

L54 ANSWER 35 OF 39 BIOSIS COPYRIGHT (c) 2007 The Thomson Corporation on STN

ACCESSION NUMBER: 2002:198729 BIOSIS Full-text
DOCUMENT NUMBER: PREV200200198729
TITLE: Genetic screen for vascular occlusion in **zebrafish** larvae.
AUTHOR(S): Gregory, Michael [Reprint author]; **Jagadeeswaran, Pudur** [Reprint author]
CORPORATE SOURCE: Cellular and Structural Biology, University of Texas Health Science Center, San Antonio, TX, USA
SOURCE: Blood, (November 16, 2001) Vol. 98, No. 11 Part 1, pp. 259a. print.
Meeting Info.: 43rd Annual Meeting of the American Society of Hematology, Part 1. Orlando, Florida, USA. December 07-11, 2001. American Society of Hematology.
CODEN: BLOOAW. ISSN: 0006-4971.
DOCUMENT TYPE: Conference; (Meeting)
Conference; Abstract; (Meeting Abstract)
Conference; (Meeting Poster)
LANGUAGE: English
ENTRY DATE: Entered STN: 20 Mar 2002
Last Updated on STN: 20 Mar 2002
ED Entered STN: 20 Mar 2002
Last Updated on STN: 20 Mar 2002

AB Despite extensive in vitro characterization of blood coagulation, the actual pathological processes of coagulation in vivo are still elusive. Current animal models of vascular occlusion have focused on the mechanisms of **thrombus** formation and lysis, but have not been used as a genetic screen for hypo- or hypercoagulable states. In this abstract, we report the use of **zebrafish** as a model organism to study in vivo vascular occlusion. Our laboratory has previously established the relevance of **zebrafish** to mammalian hemostasis. Here we show that ferric chloride (FeCl3) and phenylhydrazine (PHZ) cause vascular occlusion in the caudal artery of **zebrafish** larvae. The time to occlusion (TTO) can be reliably and rapidly detected by directly visualizing the blood flow in a light microscope. To demonstrate that the occlusive event is a result of a **thrombus** formation, larvae after chemical treatment were analyzed by histochemistry and by electron microscopy. We found evidence for formation of a fibrous material, cellular aggregates to endothelium, and alterations to erythrocytes. Further studies showed that PHZ causes externalization of phosphatidylserine in the fish erythrocytes, which generates hypercoagulable surface for coagulation reactions. To demonstrate **thrombin** generation, we microinjected fluorescently labeled human fibrinogen and human platelets into the circulation via the sinus venosus of the larvae. We observed platelet-vessel wall interactions as well as fibrin deposition at the site the occlusive event. To use this assay as a genetic screen, we have generated gynogenetic diploid embryos from naturally occurring **zebrafish** mutants by early pressure treatment of eggs fertilized with UV-treated sperm. Screening of these larvae has identified eight female fish that are carriers for a mutation leading to prolongation of TTO. To map the genetic loci associated with the above phenotype, we crossed the females with WIK males to

obtain F2 females. A percentage of gynogenetic diploids from an F2 female of one of the eight crosses also showed prolongation of TTO demonstrating a heritance of this phenotype. This constitutes the first larval screen for vascular occlusion in the **zebrafish**. This screen will be useful in the determination of plasmatic or cellular elements involved in in vivo vascular occlusion or **thrombosis**.

L54 ANSWER 36 OF 39 BIOSIS COPYRIGHT (c) 2007 The Thomson Corporation on STN
ACCESSION NUMBER: 2001:257585 BIOSIS Full-text
DOCUMENT NUMBER: PREV200100257585
TITLE: Developmental expression of a novel factor VII-like gene (linked to factor VII gene) encoding factor VII-like protein that lacks catalytic serine.
AUTHOR(S): **Jagadeeswaran, Pudur** [Reprint author]; Hanumanthaiah, Ravikumar [Reprint author]
CORPORATE SOURCE: University of Texas Health Science Center at San Antonio, 7703 Floyd Curl Drive, San Antonio, TX, 78229, USA
SOURCE: FASEB Journal, (March 7, 2001) Vol. 15, No. 4, pp. A175. print.
Meeting Info.: Annual Meeting of the Federation of American Societies for Experimental Biology on Experimental Biology 2001. Orlando, Florida, USA. March 31-April 04, 2001.
CODEN: FAJOEC. ISSN: 0892-6638.
DOCUMENT TYPE: Conference; (Meeting)
Conference; Abstract; (Meeting Abstract)
LANGUAGE: English
ENTRY DATE: Entered STN: 30 May 2001
Last Updated on STN: 19 Feb 2002
ED Entered STN: 30 May 2001
Last Updated on STN: 19 Feb 2002
AB We have characterized two full-length **zebrafish** cDNAs which showed high degree of homologies to human factor VII cDNA sequences. These cDNAs predicted amino acid sequences for two proteins (ZF-FVIIa and ZF-FVIIi), which showed 45% identity to human factor VII. ZF-FVIIa has all conserved cysteine residues, the catalytic triad of canonical serine protease and the factor VII activation site. However, ZF-FVIIi does not have conserved serine and the factor VII activation site. Thus, ZF-FVIIi appears to be a novel member of the **zebrafish** coagulation proteins. We have also sequenced approximately 16 kb of DNA from a BAC clone encoding these genes. These two genes have seven introns and eight exons and their exon organization is similar to those found in mammalian factor VII gene. The structural organization of the genes reveals that these two genes are products of gene duplication. The presence of ZF-VIIi without catalytic activity but having high degree of homologies to other domains of factor VII suggests that this protein may have a novel inhibitory role in **zebrafish** coagulation. We also analyzed the activity of factor VIIi gene promoter using GFP as a marker during different stages of embryogenesis by generating transgenic embryos. We are currently correlating the transgenic expression with the endogenous gene expression by in situ hybridization methods. The results of such analysis will be presented.

L54 ANSWER 37 OF 39 BIOSIS COPYRIGHT (c) 2007 The Thomson Corporation on STN
ACCESSION NUMBER: 2001:257134 BIOSIS Full-text
DOCUMENT NUMBER: PREV200100257134
TITLE: Developmental expression of vitamin K-dependent gamma-carboxylase activity in **zebrafish** embryos: Effect of warfarin.

AUTHOR(S): **Jagadeeswaran, Pudur** [Reprint author]; Thankavel, Bharath [Reprint author]; Gregory, Michael [Reprint author]
CORPORATE SOURCE: University of Texas Health Science Center at San Antonio, 7703 Floyd Curl Drive, San Antonio, TX, 78229, USA
SOURCE: FASEB Journal, (March 7, 2001) Vol. 15, No. 4, pp. A175. print.
Meeting Info.: Annual Meeting of the Federation of American Societies for Experimental Biology on Experimental Biology 2001. Orlando, Florida, USA. March 31-April 04, 2001.
CODEN: FAJOEC. ISSN: 0892-6638.
DOCUMENT TYPE: Conference; (Meeting)
Conference; Abstract; (Meeting Abstract)
LANGUAGE: English
ENTRY DATE: Entered STN: 30 May 2001
Last Updated on STN: 19 Feb 2002
ED Entered STN: 30 May 2001
Last Updated on STN: 19 Feb 2002
AB Vitamin K-dependent gamma-carboxylation is an important post-translation modification that is required for the functional activity of coagulation proteins such as factors VII, X, IX and prothrombin. Earlier work from our laboratory using warfarin, an inhibitor of vitamin K-dependent gamma-carboxylation, on adult **zebrafish** has provided indirect evidence for the presence of vitamin K-dependent carboxylase in **zebrafish**. In this paper, we demonstrate the presence of vitamin K-dependent carboxylase activity in **zebrafish** by directly assaying the microsomal fraction prepared from total **zebrafish**. We have also analyzed the activity of gamma-carboxylase during different stages of embryogenesis. We found gamma-carboxylase activity in unfertilized eggs as well as in the immediately fertilized embryos. The activity increased in 6 hour post-fertilization and maintained steady state levels through other advanced stages of development. The expression of activity in the early embryos may be due to the maternal protein since the activity was noted even in the unfertilized eggs. This presence of activity in the early embryos suggested that vitamin K-dependent carboxylase might have an important role in early development. Inhibitor studies with warfarin during development confirmed these findings and provided further evidence that the activity is important throughout development. Further, these studies also form the basis of selecting warfarin resistance **zebrafish** mutants and should be useful in finding genes for not only novel gamma-carboxylated proteins during development but also for the hitherto unidentified epoxide-reductase.

L54 ANSWER 38 OF 39 BIOSIS COPYRIGHT (c) 2007 The Thomson Corporation on STN
ACCESSION NUMBER: 2002:151611 BIOSIS Full-text
DOCUMENT NUMBER: PREV200200151611
TITLE: Developmental role of **thrombin** in **zebrafish**.
AUTHOR(S): Day, Kenneth [Reprint author]; Hanumanthaiah, Ravikumar [Reprint author]; **Jagadeeswaran, Pudur** [Reprint author]
CORPORATE SOURCE: Cellular and Structural Biology, University of Texas Health Science Center, San Antonio, TX, USA
SOURCE: Blood, (November 16, 2001) Vol. 98, No. 11 Part 2, pp. 69b-70b. print.
Meeting Info.: 43rd Annual Meeting of the American Society of Hematology, Part 2. Orlando, Florida, USA. December 07-11, 2001. American Society of Hematology.
CODEN: BLOOAW. ISSN: 0006-4971.
DOCUMENT TYPE: Conference; (Meeting)
Conference; Abstract; (Meeting Abstract)

LANGUAGE: English
ENTRY DATE: Entered STN: 21 Feb 2002
Last Updated on STN: 26 Feb 2002
ED Entered STN: 21 Feb 2002
Last Updated on STN: 26 Feb 2002
AB Prothrombin is a zymogen of the active serine protease **thrombin** and plays a central role in blood coagulation. We have previously shown in developing **zebrafish** embryos through in situ hybridization that prothrombin mRNA is expressed around the time of somite formation and forms a gradient in both head and tail regions around the 20 h stage. Microinjection of hirudin, a specific inhibitor for **thrombin**, at the blood forming stage demonstrated abnormal development in the gut and tail. Prothrombin knockout mice exhibit partial lethality and hemorrhaging around embryonic day 10. Thus, **thrombin**'s function and mechanism of action in early embryonic development is unclear. To elucidate **thrombin**'s role, we are studying the effects of over-expression and knockdown of prothrombin mRNA in **zebrafish** embryos. To over-express prothrombin mRNA, we designed a full length prothrombin cDNA construct, generated capped mRNAs by in vitro transcription, and injected them into four cell stage embryos. Approximately 7% of injected embryos exhibited head and tail defects. Likewise, to knockdown endogenous prothrombin mRNA, an antisense morpholino oligonucleotide complementary to the 5' untranslated region of prothrombin mRNA was injected into one or two cell stage embryos. Preliminary results also demonstrated head and tail abnormalities as well as hemorrhaging in the head and along the yolk sac. The hemorrhaging is consistent with those observed in mice. We are confirming these results and plan to identify the downstream genes that may be regulated by **thrombin** in early development.

L54 ANSWER 39 OF 39 WPIX COPYRIGHT 2007 THE THOMSON CORP on STN
ACCESSION NUMBER: 1991-310580 [42] WPIX
DOC. NO. CPI: C1991-134551 [21]
TITLE: Preparation of yeast expression vector - for efficient production of factor XIII **coagulation** protein
DERWENT CLASS: B04; D16
INVENTOR: **JAGADEESWA P**
PATENT ASSIGNEE: (TEXA-C) UNIV TEXAS SYSTEM
COUNTRY COUNT: 32

PATENT INFO ABBR.:

PATENT NO	KIND	DATE	WEEK	LA	PG	MAIN IPC
WO 9114780	A	19911003	(199142)*	EN		
AU 9175869	A	19911021	(199203)	EN		

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE

PRIORITY APPLN. INFO: US 1990-497933 19900321
AB WO 1991014780 A UPAB: 20050502
A method for producing a yeast expression vector encoding a polypeptide (A), comprises: (a) obtaining a DNA fragment (I) encoding (A); (b) obtaining a

fragment of yeast DNA containing a GAL1-GAL10 promoter region; (c) clearing a yeast cloning vector containing a multiple cloning region, (MCR); (d) inserting the fragment of yeast DNA containing the promoter region into the vector so that a GAL1 promoter is in close proximity to the MCR; and (e) inserting (I) in the MCR of the vector so that the GAL1 promoter is arranged in a transcriptional and translational unit with (A).

USE/ADVANTAGE - (A), which is biologically functional human placental factor XIII can be produced at levels constituting as much as 2% of the partially purified cell-free extract using this vector. This blood coagulation factor is produced free from contamination unlike previous processes utilised.

```
=> file caplus; d que l15
FILE 'CAPLUS' ENTERED AT 16:20:25 ON 09 MAR 2007
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.
COPYRIGHT (C) 2007 AMERICAN CHEMICAL SOCIETY (ACS)
```



```
FILE COVERS 1907 - 9 Mar 2007  VOL 146 ISS 12
FILE LAST UPDATED: 8 Mar 2007  (20070308/ED)

Effective October 17, 2005, revised CAS Information Use Policies apply.
They are available for your review at:

http://www.cas.org/infopolicy.html


L2            52 SEA FILE=CAPLUS ABB=ON  PLU=ON  JAGADEESWARAN P?/AU
L3             9 SEA FILE=CAPLUS ABB=ON  PLU=ON  L2 AND THROMB?
L4            12 SEA FILE=CAPLUS ABB=ON  PLU=ON  L2 AND (ZEBRA? OR ?FISH)
L5            13 SEA FILE=CAPLUS ABB=ON  PLU=ON  (L3 OR L4)
L6          5857 SEA FILE=CAPLUS ABB=ON  PLU=ON  DANIO RERIO+PFT/CT
L10        44898 SEA FILE=CAPLUS ABB=ON  PLU=ON  (?COAGULA?/CW OR PLATELET
                 AGGREGATION INHIBIT?/CW)
L11        52206 SEA FILE=CAPLUS ABB=ON  PLU=ON  (HEMOLYSIS/CW OR HEMORRHAG?/CW
                 OR THROMB?/CW)
L12        19497 SEA FILE=CAPLUS ABB=ON  PLU=ON  ANTICOAG?/CW
L14            3 SEA FILE=CAPLUS ABB=ON  PLU=ON  L6 AND (L12 OR L10) AND L11
L15            2 SEA FILE=CAPLUS ABB=ON  PLU=ON  L14 NOT L5


=> file medline; d que l30
FILE 'MEDLINE' ENTERED AT 16:20:31 ON 09 MAR 2007

 FILE LAST UPDATED: 8 Mar 2007 (20070308/UP).  FILE COVERS 1950 TO DATE.

  All regular MEDLINE updates from November 15 to December 16 have been
  added to MEDLINE, along with 2007 Medical Subject Headings (MeSH(R))
  and 2007 tree numbers.

  The annual reload will be available in early 2007.

  This file contains CAS Registry Numbers for easy and accurate
  substance identification.


L16           54 SEA FILE=MEDLINE ABB=ON  PLU=ON  JAGADEESWARAN P?/AU
L17           28 SEA FILE=MEDLINE ABB=ON  PLU=ON  L16 AND (?THROMB? OR ?COAGULA?
                 )
```

```
L18          24 SEA FILE=MEDLINE ABB=ON  PLU=ON  L16 AND ZEBRAFISH
L19          19 SEA FILE=MEDLINE ABB=ON  PLU=ON  L17 AND L18
L22      107337 SEA FILE=MEDLINE ABB=ON  PLU=ON  THROMBOSIS+NT/CT
L23        5582 SEA FILE=MEDLINE ABB=ON  PLU=ON  ZEBRAFISH/CT
L30           0 SEA FILE=MEDLINE ABB=ON  PLU=ON  L23 AND L22 NOT L19


=> file embase; d que l37
FILE 'EMBASE' ENTERED AT 16:20:41 ON 09 MAR 2007
Copyright (c) 2007 Elsevier B.V. All rights reserved.

 FILE COVERS 1974 TO 9 Mar 2007 (20070309/ED)

 EMBASE is now updated daily.  SDI frequency remains weekly (default)
 and biweekly.

 This file contains CAS Registry Numbers for easy and accurate
 substance identification.


L31          44 SEA FILE=EMBASE ABB=ON  PLU=ON  JAGADEESWARAN P/AU
L32           9 SEA FILE=EMBASE ABB=ON  PLU=ON  THROMBO? AND L31
L33          20 SEA FILE=EMBASE ABB=ON  PLU=ON  ZEBRA FISH AND L31
L34          21 SEA FILE=EMBASE ABB=ON  PLU=ON  (L32 OR L33)
L35        5198 SEA FILE=EMBASE ABB=ON  PLU=ON  ZEBRA FISH
L36      296951 SEA FILE=EMBASE ABB=ON  PLU=ON  THROMBO?
L37          24 SEA FILE=EMBASE ABB=ON  PLU=ON  L35 AND L36 NOT L34


=> file biosis; d que l45
FILE 'BIOSIS' ENTERED AT 16:20:47 ON 09 MAR 2007
Copyright (c) 2007 The Thomson Corporation

FILE COVERS 1969 TO DATE.
CAS REGISTRY NUMBERS AND CHEMICAL NAMES (CNs) PRESENT
FROM JANUARY 1969 TO DATE.

RECORDS LAST ADDED: 7 March 2007 (20070307/ED)


L38          61 SEA FILE=BIOSIS ABB=ON  PLU=ON  JAGADEESWARAN P?/AU
L39       10056 SEA FILE=BIOSIS ABB=ON  PLU=ON  DANIO RERIO OR ZEBRA FISH? OR
                ZEBRAFISH?
L40      254290 SEA FILE=BIOSIS ABB=ON  PLU=ON  THROMB? OR ANTI (W) (THROMB?
                OR COAG?) OR ANTITHROMB? OR ANTICOAG?
L41          21 SEA FILE=BIOSIS ABB=ON  PLU=ON  L38 AND (L39 OR L40)
L43        6310 SEA FILE=BIOSIS ABB=ON  PLU=ON  (DANIO RERIO/TI OR ZEBRA
                FISH?/TI OR ZEBRAFISH?/TI)
L44      120164 SEA FILE=BIOSIS ABB=ON  PLU=ON  (THROMB?/TI OR ANTI/TI (W)
                (THROMB?/TI OR COAG?/TI) OR ANTITHROMB?/TI OR ANTICOAG?/TI) OR
                COAG?/TI
L45           4 SEA FILE=BIOSIS ABB=ON  PLU=ON  L43 AND L44 NOT L41


=> file wpix; d que l52
FILE 'WPIX' ENTERED AT 16:20:54 ON 09 MAR 2007
COPYRIGHT (C) 2007 THE THOMSON CORPORATION

FILE LAST UPDATED:                    5 MAR 2007   <20070305/UP>
```

MOST RECENT THOMSON SCIENTIFIC UPDATE: 200716 <200716/DW>
DERWENT WORLD PATENTS INDEX SUBSCRIBER FILE, COVERS 1963 TO DATE

>>> YOU ARE IN THE NEW AND ENHANCED DERWENT WORLD PATENTS INDEX <<<

>>> New display format FRAGHITSTR available <<<
SEE ONLINE NEWS and
http://www.stn-international.de/archive/stn_online_news/fraghitstr_ex.pdf

>>> IPC Reform reclassification data for the backfile is being loaded into the database during January 2007.
There will not be any update date (UP) written for the reclassified documents, but they can be identified by 20060101/UPIC. <<<

FOR A COPY OF THE DERWENT WORLD PATENTS INDEX STN USER GUIDE,
PLEASE VISIT:
http://www.stn-international.de/training_center/patents/stn_guide.pdf

FOR DETAILS OF THE PATENTS COVERED IN CURRENT UPDATES, SEE
http://scientific.thomson.com/support/patents/coverage/latestupdates/

PLEASE BE AWARE OF THE NEW IPC REFORM IN 2006, SEE
http://www.stn-international.de/stndatabases/details/ipc_reform.html and
http://scientific.thomson.com/media/scpdf/ipcrdwpi.pdf

>>> FOR DETAILS ON THE NEW AND ENHANCED DERWENT WORLD PATENTS INDEX
PLEASE SEE
http://www.stn-international.de/stndatabases/details/dwpi_r.html <<<

L46	4	SEA FILE=WPIX ABB=ON PLU=ON JAGADEESWA?/AU
L47	2	SEA FILE=WPIX ABB=ON PLU=ON L46 AND (ZEBRAFISH OR COAGULATION)/TI
L48	290	SEA FILE=WPIX ABB=ON PLU=ON (DANIO OR BRACHYDANIO) (W) RERIO OR ZEBRA FISH? OR ZEBRAFISH? OR ZEBRA DANIO
L49	71646	SEA FILE=WPIX ABB=ON PLU=ON THROMB? OR ANTI (W) (THROMB? OR COAG?) OR ANTITHROMB? OR ANTICOAG? OR COAGULA? OR PROTHROMB?
L51	2	SEA FILE=WPIX ABB=ON PLU=ON L49 (25A) L48
L52	1	SEA FILE=WPIX ABB=ON PLU=ON L51 NOT L47

=> dup rem l15 l37 l45 l52
FILE 'CAPLUS' ENTERED AT 16:21:11 ON 09 MAR 2007
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.
COPYRIGHT (C) 2007 AMERICAN CHEMICAL SOCIETY (ACS)

FILE 'EMBASE' ENTERED AT 16:21:11 ON 09 MAR 2007
Copyright (c) 2007 Elsevier B.V. All rights reserved.

FILE 'BIOSIS' ENTERED AT 16:21:11 ON 09 MAR 2007
Copyright (c) 2007 The Thomson Corporation

FILE 'WPIX' ENTERED AT 16:21:11 ON 09 MAR 2007
COPYRIGHT (C) 2007 THE THOMSON CORPORATION
PROCESSING COMPLETED FOR L15
PROCESSING COMPLETED FOR L37
PROCESSING COMPLETED FOR L45
PROCESSING COMPLETED FOR L52

L55 29 DUP REM L15 L37 L45 L52 (2 DUPLICATES REMOVED)
ANSWERS '1-2' FROM FILE CAPLUS
ANSWERS '3-26' FROM FILE EMBASE
ANSWERS '27-29' FROM FILE BIOSIS

=> d ibib ed ab l55 1-29

L55 ANSWER 1 OF 29 CAPLUS COPYRIGHT 2007 ACS on STN DUPLICATE 2
ACCESSION NUMBER: 2003:697041 CAPLUS Full-text
DOCUMENT NUMBER: 139:224438
TITLE: Transgenic zebrafish models for thrombosis, and use in antithrombotic and thrombotic compound screening and platelet gene identification
INVENTOR(S): Rubinstein, Amy L.; Lin, Shuo; Doan, Thanh
PATENT ASSIGNEE(S): Zygogen, LLC, USA
SOURCE: PCT Int. Appl., 72 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.		DATE
WO 2003072755	A2	20030904	WO 2003-US6354		20030228
WO 2003072755	A3	20031224			
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW					
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG					
CA 2477624	A1	20030904	CA 2003-2477624		20030228
AU 2003228233	A1	20030909	AU 2003-228233		20030228
EP 1511376	A2	20050309	EP 2003-726011		20030228
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK					
US 2005120392	A1	20050602	US 2003-505922		20030228
PRIORITY APPLN. INFO.:			US 2002-360711P	P	20020228
			WO 2003-US6354	W	20030228

ED Entered STN: 05 Sep 2003
AB The invention discloses zebrafish models of thrombosis that allow screening of compds. for antithrombotic or thrombotic properties in vivo in a whole vertebrate organism. The invention also discloses the identification and validation of platelet genes as targets for antithrombotic or thrombotic compds.

L55 ANSWER 2 OF 29 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2003:812481 CAPLUS Full-text
DOCUMENT NUMBER: 140:25697
TITLE: Genetic analysis of hemostasis and thrombosis using vascular occlusion in zebrafish
AUTHOR(S): Gregory, Michael Joseph
CORPORATE SOURCE: Health Science Center, Univ. of Texas, San Antonio, TX, USA

SOURCE: (2003) 149 pp. Avail.: UMI, Order No. DA3076388
From: Diss. Abstr. Int., B 2003, 63(12), 5651
DOCUMENT TYPE: Dissertation
LANGUAGE: English
ED Entered STN: 16 Oct 2003
AB Unavailable

L55 ANSWER 3 OF 29 EMBASE COPYRIGHT (c) 2007 Elsevier B.V. All rights reserved on STN DUPLICATE 1
ACCESSION NUMBER: 2005553037 EMBASE Full-text
TITLE: Analysis of **thrombocyte** development in CD41-GFP transgenic zebrafish.
AUTHOR: Lin H.-F.; Traver D.; Zhu H.; Dooley K.; Paw B.H.; Zon L.I.; Handin R.I.
CORPORATE SOURCE: R.I. Handin, Brigham and Women's Hospital, 75 Francis St, Boston, MA 02115, United States. rhandin@partners.org
SOURCE: Blood, (1 Dec 2005) Vol. 106, No. 12, pp. 3803-3810. .
Refs: 36
ISSN: 0006-4971 CODEN: BLOOAW
COUNTRY: United States
DOCUMENT TYPE: Journal; Article
FILE SEGMENT: 021 Developmental Biology and Teratology
022 Human Genetics
025 Hematology
026 Immunology, Serology and Transplantation
029 Clinical Biochemistry
LANGUAGE: English
SUMMARY LANGUAGE: English
ENTRY DATE: Entered STN: 19 Jan 2006
Last Updated on STN: 19 Jan 2006
ED Entered STN: 19 Jan 2006
Last Updated on STN: 19 Jan 2006
AB **Thrombocytes** are the nucleated equivalent of platelets in nonmammalian vertebrates such as the zebrafish, Danio rerio. We have cloned zebrafish CD41 cDNA (α(IIb), glycoprotein IIb [GPIIb]) and its promoter and have generated transgenic zebrafish lines with green fluorescent protein (GFP)-tagged **thrombocytes**. CD41 mRNA transcripts appeared 42 hours after fertilization (hpf) by reverse-transcriptase-polymerase chain reaction (RT-PCR) and at 48 hpf in circulating hematopoietic cells. Flow sorting of **thrombocytes** from the mesonephros of adult CD41-GFP zebrafish showed a GFP(high) subset, which had the morphologic appearance of mature **thrombocytes**, and a GFP(low) subset with an immature appearance, suggesting that they may be **thrombocyte** precursors. Confocal laser microscopy of embryos 40 and 48 hpf also showed a nonmobile population of GFP(+) cells in a discrete area between the dorsal aorta and caudal vein. Production of circulating **thrombocytes** was inhibited by the injection of antisense morpholinos for the stem-cell transcription factor scl and c-mpl, the receptor for **thrombopoietin**. The nonmobile pool of GFP(+) cells was abolished by scl knockdown and partially inhibited by c-mpl knockdown. These studies have shown that it is possible to identify **thrombocytes**, **thrombocyte** precursors, and, possibly, early hematopoietic stem cells in zebrafish embryos and track their proliferation and maturation. .COPYRGT. 2005 by The American Society of Hematology.

L55 ANSWER 4 OF 29 EMBASE COPYRIGHT (c) 2007 Elsevier B.V. All rights reserved on STN
ACCESSION NUMBER: 2006530041 EMBASE Full-text
TITLE: Profiling of prostanoids in zebrafish embryonic development.

AUTHOR: Yeh H.-C.; Wang L.-H.
CORPORATE SOURCE: L.-H. Wang, Division of Hematology, Department of Internal Medicine, University of Texas Health Science Center, Houston, TX 77030, United States. lee-ho.wang@uth.tmc.edu
SOURCE: Prostaglandins Leukotrienes and Essential Fatty Acids, (2006) Vol. 75, No. 6, pp. 397-402. .
Refs: 34
ISSN: 0952-3278 CODEN: PLEAEU
PUBLISHER IDENT.: S 0952-3278(06)00148-7
COUNTRY: United Kingdom
DOCUMENT TYPE: Journal; Article
FILE SEGMENT: 001 Anatomy, Anthropology, Embryology and Histology
021 Developmental Biology and Teratology
029 Clinical Biochemistry
LANGUAGE: English
SUMMARY LANGUAGE: English
ENTRY DATE: Entered STN: 21 Nov 2006
Last Updated on STN: 21 Nov 2006
ED Entered STN: 21 Nov 2006
Last Updated on STN: 21 Nov 2006

AB Prostanoids (PG) play important roles in vascular, pulmonary, reproductive and renal physiology. Little is known about their roles in the embryonic development. Using the oviparous zebrafish embryo as a model, we determined the temporal expression of PGs synthesized from exogenous prostaglandin H(2). Prostaglandin E(2) is the major PG throughout first 120 h post-fertilization (hpf), whereas prostaglandin F(2α) is at a lower but also a constant level. Reverse transcription-polymerase chain reaction (RT-PCR) showed that transcripts of cytosolic and membrane-bound PGE synthases were evident during the 120 hpf period. Compared with **thromboxane** A(2), the level of prostacyclin (PGI(2))is higher at first 24 hpf, the stage before the formation of blood vessel. RT-PCR showed that transcript of prostacyclin synthase appeared at 7 hpf whereas **thromboxane** synthase appeared at 48 hpf, suggesting that PGI(2) has additional functions besides hemostasis. Interestingly, level of prostaglandin D(2) (PGD(2)) followed an exponential decay over 120 hpf with a rate constant of 0.048 h(-1) and transcript of lipocalin-type PGD synthase was expressed at a higher level at early stage of development, suggesting that PGD(2) is highly regulated during embryogenesis. .COPYRGT. 2006 Elsevier Ltd. All rights reserved.

L55 ANSWER 5 OF 29 EMBASE COPYRIGHT (c) 2007 Elsevier B.V. All rights reserved on STN
ACCESSION NUMBER: 2006244661 EMBASE Full-text
TITLE: Phylogenomic analysis of vertebrate **thrombospondins** reveals fish-specific paralogues, ancestral gene relationships and a tetrapod innovation.
AUTHOR: McKenzie P.; Chadalavada S.C.; Bohrer J.; Adams J.C.
CORPORATE SOURCE: J.C. Adams, Cleveland Clinic Lerner College of Medicine, Case Western Reserve University, Cleveland Clinic Foundation, Cleveland, OH 44195, United States. adamsj@ccf.org
SOURCE: BMC Evolutionary Biology, (18 Apr 2006) Vol. 6. arn. 33.
Refs: 85
ISSN: 1471-2148 E-ISSN: 1471-2148
COUNTRY: United Kingdom
DOCUMENT TYPE: Journal; Article
FILE SEGMENT: 022 Human Genetics
LANGUAGE: English
SUMMARY LANGUAGE: English
ENTRY DATE: Entered STN: 2 Oct 2006

Last Updated on STN: 2 Oct 2006
ED Entered STN: 2 Oct 2006
Last Updated on STN: 2 Oct 2006
AB Background: **Thrombospondins** (TSPs) are evolutionarily-conserved, extracellular, calcium-binding glycoproteins with important roles in cell-extracellular matrix interactions, angiogenesis, synaptogenesis and connective tissue organisation. Five TSPs, designated TSP-1 through TSP-5, are encoded in the human genome. All but one have known roles in acquired or inherited human diseases. To further understand the roles of TSPs in human physiology and pathology, it would be advantageous to extend the repertoire of relevant vertebrate models. In general the zebrafish is proving an excellent model organism for vertebrate biology, therefore we set out to evaluate the status of TSPs in zebrafish and two species of pufferfish. Results: We identified by bioinformatics that three fish species encode larger numbers of TSPs than vertebrates, yet all these sequences group as homologues of TSP-1 to -4. By phylogenomic analysis of neighboring genes, we uncovered that, in fish, a TSP-4-like sequence is encoded from the gene corresponding to the tetrapod TSP-5 gene. Thus, all TSP genes show conservation of synteny between fish and tetrapods. In the human genome, the TSP-1, TSP-3, TSP-4 and TSP-5 genes lie within paralogous regions that provide insight into the ancestral genomic context of vertebrate TSPs. Conclusion: A new model for TSP evolution in vertebrates is presented. The TSP-5 protein sequence has evolved rapidly from a TSP-4-like sequence as an innovation in the tetrapod lineage. TSP biology in fish is complicated by the presence of additional lineage- and species-specific TSP paralogues. These novel results give deeper insight into the evolution of TSPs in vertebrates and open new directions for understanding the physiological and pathological roles of TSP-4 and TSP-5 in humans. .COPYRGT. 2006McKenzie et al; licensee BioMed Central Ltd.

L55 ANSWER 6 OF 29 EMBASE COPYRIGHT (c) 2007 Elsevier B.V. All rights reserved on STN

ACCESSION NUMBER:	2006003445 EMBASE Full-text
TITLE:	Use of the zebrafish system to study primitive and definitive hematopoiesis.
AUTHOR:	De Jong J.L.O.; Zon L.I.
CORPORATE SOURCE:	J.L.O. De Jong, Division of Hematology/Oncology, Children's Hospital Boston, Dana-Farber Cancer Institute, Boston, MA 02115, United States. jill.dejong@childrens.harvard.edu
SOURCE:	Annual Review of Genetics, (2005) Vol. 39, pp. 481-501. . Refs: 92 ISSN: 0066-4197 CODEN: ARVGB7
COUNTRY:	United States
DOCUMENT TYPE:	Journal; General Review
FILE SEGMENT:	021 Developmental Biology and Teratology 025 Hematology
LANGUAGE:	English
SUMMARY LANGUAGE:	English
ENTRY DATE:	Entered STN: 2 Feb 2006 Last Updated on STN: 2 Feb 2006

ED Entered STN: 2 Feb 2006
Last Updated on STN: 2 Feb 2006
AB The zebrafish (Dank rerio) has emerged as an ideal organism for the study of hematopoiesis, the process by which all the cellular elements of the blood are formed. These elements, including erythrocytes, granulocytes, monocytes, lymphocytes, and **thrombocytes**, are formed through complex genetic signaling pathways that are highly conserved throughout phylogeny. Large-scale forward genetic screens have identified numerous blood mutants in zebrafish, helping to elucidate specific signaling pathways important for hematopoietic stem cells (HSCs) and the various committed blood cell lineages. Here we review

both primitive and definitive hematopoiesis in zebrafish, discuss various genetic methods available in the zebrafish model for studying hematopoiesis, and describe some of the zebrafish blood mutants identified to date, many of which have known human disease counterparts. Copyright .COPYRGT. 2005 by Annual Reviews. All rights reserved.

L55 ANSWER 7 OF 29 EMBASE COPYRIGHT (c) 2007 Elsevier B.V. All rights reserved on STN

ACCESSION NUMBER: 2005252375 EMBASE Full-text
TITLE: Cyclooxygenase-1 signaling is required for vascular tube formation during development.
AUTHOR: Cha Y.I.; Kim S.-H.; Solnica-Krezel L.; DuBois R.N.
CORPORATE SOURCE: R.N. DuBois, Department of Medicine, Cell and Developmental Biology and Cancer Biology, Vanderbilt University Medical Center, Vanderbilt University, 2300 Pierce Ave, Nashville, TN 37232, United States. raymond.dubois@vanderbilt.edu
SOURCE: Developmental Biology, (1 Jun 2005) Vol. 282, No. 1, pp. 274-283. .
Refs: 28
ISSN: 0012-1606 CODEN: DEBIAO
PUBLISHER IDENT.: S 0012-1606(05)00183-1
COUNTRY: United States
DOCUMENT TYPE: Journal; Article
FILE SEGMENT: 021 Developmental Biology and Teratology
029 Clinical Biochemistry
LANGUAGE: English
SUMMARY LANGUAGE: English
ENTRY DATE: Entered STN: 14 Jul 2005
Last Updated on STN: 14 Jul 2005
ED Entered STN: 14 Jul 2005
Last Updated on STN: 14 Jul 2005

AB Prostaglandin endoperoxide synthases (PTGS), commonly referred to as cyclooxygenases (COX-1 and COX-2), catalyze the key step in the synthesis of biologically active prostaglandins (PGs), the conversion of arachidonic acid (AA) into prostaglandin H2 (PGH2). Although COX and prostaglandins have been implicated in a wide variety of physiologic processes, an evaluation of the role of prostaglandins in early mammalian development has been difficult due to the maternal contribution of prostaglandins from the uterus: COX null mouse embryos develop normally during embryogenesis. Here, we verify that inhibition of COX-1 results in zebrafish gastrulation arrest and shows that COX-1 expression becomes restricted to the posterior mesoderm during somitogenesis and to posterior mesoderm organs at pharyngula stage. Inhibition of COX-1 signaling after gastrulation results in defective vascular tube formation and shortened intersomitic vessels in the posterior body region. These defects are rescued completely by PGE(2) treatment or, to a lesser extent, by PGF (2α), but not by other prostaglandins, such as PGI(2), TxB(2), or PGD(2). Functional knockdown of COX-1 using antisense morpholino oligonucleotide translation interference also results in posterior vessel defect in addition to enlarged posterior nephric duct, phenocopying the defects caused by inhibition of COX-1 activity. Together, we provide the first evidence that COX-1 signaling is required for development of posterior mesoderm organs, specifically in the vascular tube formation and posterior nephric duct development. .COPYRGT. 2005 Elsevier Inc. All rights reserved.

L55 ANSWER 8 OF 29 EMBASE COPYRIGHT (c) 2007 Elsevier B.V. All rights reserved on STN

ACCESSION NUMBER: 2005040516 EMBASE Full-text
TITLE: Coregulation of GATA factors by the Friend of GATA (FOG)

family of multitype zinc finger proteins.
AUTHOR: Cantor A.B.; Orkin S.H.
CORPORATE SOURCE: S.H. Orkin, Div. of Pediat. Hematology/Oncology, Children's Hospital Boston, 300 Longwood Avenue, Boston, MA 02115, United States. orkin@bloodgroup.tch.harvard.edu
SOURCE: Seminars in Cell and Developmental Biology, (2005) Vol. 16, No. 1, pp. 117-128. .
Refs: 73
ISSN: 1084-9521 CODEN: SCDBFX
PUBLISHER IDENT.: S 1084-9521(04)00102-8
COUNTRY: United Kingdom
DOCUMENT TYPE: Journal; General Review
FILE SEGMENT: 005 General Pathology and Pathological Anatomy
021 Developmental Biology and Teratology
022 Human Genetics
025 Hematology
029 Clinical Biochemistry
LANGUAGE: English
SUMMARY LANGUAGE: English
ENTRY DATE: Entered STN: 4 Feb 2005
Last Updated on STN: 4 Feb 2005
ED Entered STN: 4 Feb 2005
Last Updated on STN: 4 Feb 2005
AB The Friend of GATA (FOG) family of proteins is an evolutionarily conserved class of large multitype zinc finger cofactors that bind to the amino zinc finger of GATA transcription factors and modulate their activity. Two FOG genes have been identified in mammals, both of which interact with each of the six known vertebrate GATA factors in vitro. Physical interaction between FOG and GATA proteins in vivo is essential for the development of a broad array of tissues, reflecting the overlapping expression patterns of these factors. In this review, we will discuss the identification and characterization of FOG proteins, their role in human disease, and recent studies that shed new light on their function and regulation. .COPYRGT. 2004 Elsevier Ltd. All rights reserved.

L55 ANSWER 9 OF 29 EMBASE COPYRIGHT (c) 2007 Elsevier B.V. All rights reserved on STN
ACCESSION NUMBER: 2005312184 EMBASE Full-text
TITLE: The sticky matter of young versus old platelets.
AUTHOR: Marks P.W.
SOURCE: Blood, (1 Jul 2005) Vol. 106, No. 1, pp. 7. .
Refs: 1
ISSN: 0006-4971 CODEN: BLOOAW
COUNTRY: United States
DOCUMENT TYPE: Journal; Note
FILE SEGMENT: 005 General Pathology and Pathological Anatomy
020 Gerontology and Geriatrics
025 Hematology
LANGUAGE: English
ENTRY DATE: Entered STN: 5 Aug 2005
Last Updated on STN: 5 Aug 2005
ED Entered STN: 5 Aug 2005
Last Updated on STN: 5 Aug 2005

L55 ANSWER 10 OF 29 EMBASE COPYRIGHT (c) 2007 Elsevier B.V. All rights reserved on STN
ACCESSION NUMBER: 2004428721 EMBASE Full-text
TITLE: Matrix metalloproteinases at a glance.
AUTHOR: Lee M.-H.; Murphy G.

CORPORATE SOURCE: G. Murphy, Dept. of Oncology, University of Cambridge, Cambridge Inst. for Medical Research, Hills Road, Cambridge CB2 2XY, United Kingdom. gm290@cam.ac.uk
SOURCE: Journal of Cell Science, (15 Aug 2004) Vol. 117, No. 18, pp. 4015-4016. .
ISSN: 0021-9533 CODEN: JNCSAI
COUNTRY: United Kingdom
DOCUMENT TYPE: Journal; Note
FILE SEGMENT: 029 Clinical Biochemistry
LANGUAGE: English
ENTRY DATE: Entered STN: 21 Oct 2004
Last Updated on STN: 21 Oct 2004
ED Entered STN: 21 Oct 2004
Last Updated on STN: 21 Oct 2004

L55 ANSWER 11 OF 29 EMBASE
ACCESSION NUMBER: 2004513284 EMBASE Full-text
TITLE: Fight against cancer taking centre stage in Boston.
AUTHOR: Knies-Bamforth U.
CORPORATE SOURCE: United Kingdom. u.knies-bamforth@elsevier.com
SOURCE: Drug Discovery Today, (1 Dec 2004) Vol. 9, No. 23, pp. 998-999. .
Refs: 5
ISSN: 1359-6446 CODEN: DDTOFS
PUBLISHER IDENT.: S 1359-6446(04)03292-1
COUNTRY: United Kingdom
DOCUMENT TYPE: Journal; Conference Article
FILE SEGMENT: 016 Cancer
017 Public Health, Social Medicine and Epidemiology
030 Pharmacology
037 Drug Literature Index
LANGUAGE: English
ENTRY DATE: Entered STN: 17 Dec 2004
Last Updated on STN: 17 Dec 2004
ED Entered STN: 17 Dec 2004
Last Updated on STN: 17 Dec 2004

L55 ANSWER 12 OF 29 EMBASE
ACCESSION NUMBER: 2004362622 EMBASE Full-text
TITLE: Zebrafish as a model of human hematologic disorders.
AUTHOR: Shafizadeh E.; Paw B.H.
CORPORATE SOURCE: Dr. B.H. Paw, Brigham and Women's Hospital, Hematology BCHRB 06.213, 75 Francis Street, Boston, MA 02115, United States. bpaw@rics.bwh.harvard.edu
SOURCE: Current Opinion in Hematology, (2004) Vol. 11, No. 4, pp. 255-261. .
Refs: 70
ISSN: 1065-6251 CODEN: COHEF4
COUNTRY: United States
DOCUMENT TYPE: Journal; General Review
FILE SEGMENT: 005 General Pathology and Pathological Anatomy
022 Human Genetics
025 Hematology
LANGUAGE: English
SUMMARY LANGUAGE: English
ENTRY DATE: Entered STN: 16 Sep 2004
Last Updated on STN: 16 Sep 2004
ED Entered STN: 16 Sep 2004

Last Updated on STN: 16 Sep 2004

AB Purpose of review: This review summarizes the status of zebrafish as a genetic model to study human hematological disorders. Much of our current understanding of the function of genes modulating the process of hematopoietic stem cell generation, specification, and differentiation has come from mutant analysis. Because of the transparency of zebrafish embryos that allows for direct visualization of circulating erythroid cells, mutations affecting zebrafish erythropoiesis were among the first characterized mutants through positional cloning and candidate gene strategies. Recent findings: New technologies have evolved that allow for generation, detection, and characterization of lineage specific alterations in the hematopoietic system. We will also briefly discuss the applications of several of these technologies such as targeted gene knockdown using antisense morpholinos, small molecule screen, transgenesis, and cell transplantation as related to blood disorders and hematopoietic development. Summary: The combination of phenotype-driven forward genetic analyses and innovative technical advances has conferred zebrafish as a powerful genetic model to further dissect the function of hematopoietic genes. Through the use of available resources, the identification of novel genes or novel function for known hematopoietic genes will have important implications for our understanding of human disease pathogenesis, treatment, and prevention. .COPYRGT. 2004 Lippincott Williams & Wilkins.

L55 ANSWER 13 OF 29 EMBASE COPYRIGHT (c) 2007 Elsevier B.V. All rights reserved on STN

ACCESSION NUMBER: 2005047986 EMBASE Full-text
TITLE: Use of a monoclonal antibody specific for activated endothelial cells to quantitate angiogenesis in vivo in zebrafish after drug treatment.
AUTHOR: Wen L.S.; Eng K.; Lee J.; McGrath P.
CORPORATE SOURCE: L.S. Wen, Phylonix Pharmaceuticals, Inc., 100 Inman Street, Cambridge, MA 02139, United States. wen@phylonix.com
SOURCE: Angiogenesis, (2004) Vol. 7, No. 3, pp. 243-253. .
Refs: 38
ISSN: 0969-6970 CODEN: AGIOFT
COUNTRY: Netherlands
DOCUMENT TYPE: Journal; Article
FILE SEGMENT: 021 Developmental Biology and Teratology
026 Immunology, Serology and Transplantation
029 Clinical Biochemistry
LANGUAGE: English
SUMMARY LANGUAGE: English
ENTRY DATE: Entered STN: 10 Feb 2005
Last Updated on STN: 10 Feb 2005

ED Entered STN: 10 Feb 2005
Last Updated on STN: 10 Feb 2005

AB We have recently generated a monoclonal antibody (mAb), Phy-V002, which specifically labels activated vascular endothelial cells (EC) in zebrafish. Here, we show that this mAb labels activated EC in newly formed vessels in vivo without staining mature vessels or other tissues. Using this mAb, drug effects on in vivo EC migration and vessel formation were visually assessed by whole-mount immunochemical staining in the transparent embryo. In addition, we have developed a quantitative microplate-based ELISA that measures EC proliferation in vivo after drug treatment. We have validated the quantitative in vivo ELISA using several antiangiogenic small molecules with different mechanisms of action which were added directly to the fish water. Some of these drugs, including: 2-methoxyestradiol, flavopiridol, paclitaxel, and genistein, are currently in clinical trials. We also injected large molecule drugs, including 3TSR and TSR2+KRFK, recombinant human antiangiogenic

peptides of **thrombospondin**-1, a natural protein. To demonstrate that proangiogenic effects can also be assessed in zebrafish, we assessed effects of penicillamine and simvastatin, two proangiogenic compounds shown to stimulate vessel formation in rodents. Using whole-mount immunochemical staining with Phy-V002, inhibition of EC migration and inhibition or stimulation of vessel formation were visually observed for each compound. Next, using the quantitative in vivo angiogenesis ELISA, we generated dose-response curves for each compound. Compared to conventional assays, advantages of using zebrafish to assess drug effects on angiogenesis include: (1) a short assay time; (2) easy animal maintenance; (3) use of small quantities of drug; (4) single dosing; (5) a quantitative assay format; and (6) use of statistically significant number of animals per test.

L55 ANSWER 14 OF 29 EMBASE

ACCESSION NUMBER: 2004171212 EMBASE Full-text
TITLE: The zebrafish metaxin 3 gene (mtx3): cDNA and protein structure, and comparison to zebrafish metaxins 1 and 2.
AUTHOR: Adolph K.W.
CORPORATE SOURCE: K.W. Adolph, Dept. Biochem., Molec. Biol. B., University of Minnesota, 6-155 Jackson Hall, 321 Church St. S.E., Minneapolis, MN 55455, United States. adolp001@umn.edu
SOURCE: Gene, (14 Apr 2004) Vol. 330, No. 1-2, pp. 67-73. .
Refs: 21
ISSN: 0378-1119 CODEN: GENED6
PUBLISHER IDENT.: S 0378-1119(04)00019-8
COUNTRY: Netherlands
DOCUMENT TYPE: Journal; Article
FILE SEGMENT: 022 Human Genetics
029 Clinical Biochemistry
LANGUAGE: English
SUMMARY LANGUAGE: English
ENTRY DATE: Entered STN: 13 May 2004
Last Updated on STN: 13 May 2004
ED Entered STN: 13 May 2004
Last Updated on STN: 13 May 2004

AB The metaxin genes of zebrafish have been investigated by determining the sequences of metaxin cDNAs and analyzing the translated amino acid sequences. A zebrafish cDNA corresponding to a third metaxin gene was identified. Zebrafish cDNAs representing metaxins 1 and 2, previously described in human and mouse, were also identified. The zebrafish metaxin genes are designated mtx1, mtx2 and mtx3, following zebrafish nomenclature guidelines. The zebrafish metaxin 3 (ZMTX3) cDNA codes for a protein of 313 amino acids (MW 35,208), while the ZMTX1 and ZMTX2 cDNAs specify proteins of 317 residues (MW 35,906) and 274 residues (MW 30,852), respectively. Alignment of the ZMTX3 and ZMTX1 amino acid sequences revealed 40% identities, while 26% identities were found for the ZMTX3/ZMTX2 alignment. A phylogenetic tree showed that the metaxins share a common ancestry, with the grouping of the zebrafish sequences with the homologous human and mouse sequences. Analysis of the domain structure of the zebrafish metaxins uncovered a glutathione S-transferase (GST) domain for each protein and, in addition, a thioredoxin-like domain for ZMTX2. A region of transmembrane helices was found near the C-terminus for the ZMTX1 protein. In addition, regions of alpha helix were seen to be the predominant feature of zebrafish metaxin secondary structure, particularly for ZMTX2 and ZMTX3. The ZMTX3 cDNA sequence has the greatest homology to a human sequence at cytogenetic location 5q14.1, close to the **thrombospondin** 4 gene (THBS4). Also, the mouse metaxin 3 homologue is adjacent to Thbs4 at 13C3.

L55 ANSWER 15 OF 29 EMBASE COPYRIGHT (c) 2007 Elsevier B.V. All rights reserved on STN

ACCESSION NUMBER: 2005065647 EMBASE Full-text
TITLE: Discovery of therapeutic targets by phenotype-based zebrafish screens.
AUTHOR: Peterson R.T.
CORPORATE SOURCE: R.T. Peterson, Developmental Biology Laboratory, Cardiovascular Research Center, Massachusetts General Hospital, 149 13th Street, Charlestown, MA 02129, United States. peterson@cvrc.mgh.harvard.edu
SOURCE: Drug Discovery Today: Technologies, (2004) Vol. 1, No. 1, pp. 49-54. .
Refs: 37
ISSN: 1740-6749
PUBLISHER IDENT.: S 1740-6749(04)00008-3
COUNTRY: United Kingdom
DOCUMENT TYPE: Journal; Article
FILE SEGMENT: 021 Developmental Biology and Teratology
027 Biophysics, Bioengineering and Medical Instrumentation
029 Clinical Biochemistry
030 Pharmacology
036 Health Policy, Economics and Management
037 Drug Literature Index
LANGUAGE: English
SUMMARY LANGUAGE: English
ENTRY DATE: Entered STN: 24 Feb 2005
Last Updated on STN: 24 Feb 2005
ED Entered STN: 24 Feb 2005
Last Updated on STN: 24 Feb 2005
AB The easy identification of phenotypes in the transparent zebrafish embryo has enabled numerous genetic, antisense morpholino oligonucleotide, and small molecule screens. Can zebrafish screens also be used for unbiased discovery of novel drug targets? .COPYRGT. 2004 Elsevier Ltd. All rights reserved.

L55 ANSWER 16 OF 29 EMBASE COPYRIGHT (c) 2007 Elsevier B.V. All rights reserved on STN

ACCESSION NUMBER: 2003133342 EMBASE Full-text
TITLE: Zebrafish: From disease modeling to drug discovery.
AUTHOR: Rubinstein A.L.
CORPORATE SOURCE: A.L. Rubinstein, Zygogen LLC, 520 Kell Hall, 24 Peachtree Center Avenue, Atlanta GA 30303, United States. amy@zygogen.com
SOURCE: Current Opinion in Drug Discovery and Development, (2003) Vol. 6, No. 2, pp. 218-223. .
Refs: 59
ISSN: 1367-6733 CODEN: CODDFF
COUNTRY: United Kingdom
DOCUMENT TYPE: Journal; General Review
FILE SEGMENT: 005 General Pathology and Pathological Anatomy
022 Human Genetics
029 Clinical Biochemistry
037 Drug Literature Index
LANGUAGE: English
SUMMARY LANGUAGE: English
ENTRY DATE: Entered STN: 17 Apr 2003
Last Updated on STN: 17 Apr 2003
ED Entered STN: 17 Apr 2003

Last Updated on STN: 17 Apr 2003

AB The study of zebrafish, a leading model organism for developmental biology, is rapidly expanding to include human disease. Zebrafish models based on known disease mechanisms have been developed in several therapeutic areas, including blood diseases, diabetes, muscular dystrophy, neurodegenerative disease, angiogenesis and lipid metabolism. This review summarizes recent progress in disease model development, and outlines the potential of zebrafish to contribute to drug discovery through the identification of novel drug targets, validation of those targets and screening for new therapeutic compounds.

L55 ANSWER 17 OF 29 EMBASE

ACCESSION NUMBER: 2003376862 EMBASE Full-text
TITLE: Isolation and characterization of zebrafish NFE2.
AUTHOR: Pratt S.J.; Drejer A.; Foott H.; Barut B.; Brownlie A.; Postlethwait J.; Kato Y.; Yamamoto M.; Zon L.I.
CORPORATE SOURCE: L.I. Zon, Howard Hughes Medical Institute, Children's Hospital, Enders 7, 300 Longwood Ave., Boston, MA 02115, United States. zon@enders.tch.harvard.edu
SOURCE: Physiological Genomics, (2003) Vol. 11, pp. 91-98. .
Refs: 43
ISSN: 1531-2267 CODEN: PHGEFP
COUNTRY: United States
DOCUMENT TYPE: Journal; Article
FILE SEGMENT: 029 Clinical Biochemistry
LANGUAGE: English
SUMMARY LANGUAGE: English
ENTRY DATE: Entered STN: 2 Oct 2003
Last Updated on STN: 2 Oct 2003

ED Entered STN: 2 Oct 2003
Last Updated on STN: 2 Oct 2003

AB Vertebrate hematopoiesis is regulated by distinct cell-specific transcription factors such as GATA-1 and SCL. Mammalian p45-NFE2 was characterized for its ability to bind the hypersensitive sites of the globin locus control region. NFE2 is a member of a cap'n'collar (CNC) and basic zipper (BZIP) superfamily that regulates gene transcription. It has been implicated in diverse processes such as globin gene expression, oxidative stress, and platelet lineage differentiation. Here, we have isolated the zebrafish ortholog of NFE2. The gene is highly homologous, particularly in the DNA-binding domain. Mapping the zebrafish NFE2 to linkage group 23 establishes a region of chromosomal synteny with human chromosome 12, further suggesting evolutionary conservation. During embryogenesis, the zebrafish gene is expressed specifically in erythroid cells and also in the developing ear. NFE2 expression is lacking in zebrafish mutants that have no hematopoietic cells. An analysis of the sauternes mutant, which carries a mutation in the ALAS-2 gene and thus has defective heme synthesis, demonstrates higher levels of NFE2 expression than normal. This further establishes the block to erythroid differentiation in the sauternes mutant. Our studies demonstrate conservation of the vertebrate genetic program for the erythroid lineage.

L55 ANSWER 18 OF 29 EMBASE

ACCESSION NUMBER: 2004503688 EMBASE Full-text
TITLE: Comparative genomic analysis reveals independent expansion of a lineage-specific gene family in vertebrates: The class II cytokine receptors and their ligands in mammals and fish.
AUTHOR: Lutfalla G.; Crollius H.R.; Stange-Thomann N.; Jaillon O.;

Mogensen K.; Monneron D.
CORPORATE SOURCE: G. Lutfalla, Defenses Antivirales Antitumorales, CNRS-UMR5124, 1919 route de Mende, 34293 Montpellier Cedex 5, France. lutfalla@infobiogen.fr
SOURCE: BMC Genomics, (17 Jul 2003) Vol. 4, pp. 15p. .
Refs: 43
ISSN: 1471-2164 CODEN: BGMEET
COUNTRY: United Kingdom
DOCUMENT TYPE: Journal; Article
FILE SEGMENT: 022 Human Genetics
029 Clinical Biochemistry
LANGUAGE: English
SUMMARY LANGUAGE: English
ENTRY DATE: Entered STN: 9 Dec 2004
Last Updated on STN: 9 Dec 2004
ED Entered STN: 9 Dec 2004
Last Updated on STN: 9 Dec 2004
AB Background: The high degree of sequence conservation between coding regions in fish and mammals can be exploited to identify genes in mammalian genomes by comparison with the sequence of similar genes in fish. Conversely, experimentally characterized mammalian genes may be used to annotate fish genomes. However, gene families that escape this principle include the rapidly diverging cytokines that regulate the immune system, and their receptors. A classic example is the class II helical cytokines (HCII) including type I, type II and lambda interferons, IL10 related cytokines (IL10, IL19, IL20, IL22, IL24 and IL26) and their receptors (HCRII). Despite the report of a near complete pufferfish (Takifugu rubripes) genome sequence, these genes remain undescribed in fish. Results: We have used an original strategy based both on conserved amino acid sequence and gene structure to identify HCII and HCRII in the genome of another pufferfish, Tetraodon nigroviridis that is amenable to laboratory experiments. The 15 genes that were identified are highly divergent and include a single interferon molecule, three IL10 related cytokines and their potential receptors together with two Tissue Factor (TF). Some of these genes form tandem clusters on the Tetraodon genome. Their expression pattern was determined in different tissues. Most importantly, Tetraodon interferon was identified and we show that the recombinant protein can induce antiviral MX gene expression in Tetraodon primary kidney cells. Similar results were obtained in Zebrafish which has 7 MX genes. Conclusion: We propose a scheme for the evolution of HCII and their receptors during the radiation of bony vertebrates and suggest that the diversification that played an important role in the fine-tuning of the ancestral mechanism for host defense against infections probably followed different pathways in amniotes and fish. .COPYRGT. 2003 Lutfalla et al; licensee BioMed Central Ltd.

L55 ANSWER 19 OF 29 EMBASE COPYRIGHT (c) 2007 Elsevier B.V. All rights reserved on STN
ACCESSION NUMBER: 2002217173 EMBASE Full-text
TITLE: Developmental expression of functional cyclooxygenases in zebrafish.
AUTHOR: Grosser T.; Yusuff S.; Cheskis E.; Pack M.A.; FitzGerald G.A.
CORPORATE SOURCE: G.A. FitzGerald, Center for Experimental Therapeutics, Univ. of Penn. School of Medicine, 153 Johnson Pavilion, 3620 Hamilton Walk, Philadelphia, PA 19104, United States. garret@spirit.gcrc.upenn.edu
SOURCE: Proceedings of the National Academy of Sciences of the United States of America, (11 Jun 2002) Vol. 99, No. 12, pp. 8418-8423. .

Refs: 35
ISSN: 0027-8424 CODEN: PNASA6
COUNTRY: United States
DOCUMENT TYPE: Journal; Article
FILE SEGMENT: 021 Developmental Biology and Teratology
022 Human Genetics
029 Clinical Biochemistry
037 Drug Literature Index
048 Gastroenterology
LANGUAGE: English
SUMMARY LANGUAGE: English
ENTRY DATE: Entered STN: 8 Jul 2002
Last Updated on STN: 8 Jul 2002
ED Entered STN: 8 Jul 2002
Last Updated on STN: 8 Jul 2002
AB Study of the cyclooxygenases (COXs) has been limited by the role of COX-2 in murine reproduction and renal organogenesis. We sought to characterize COX expression and function in zebrafish (z). Full-length cDNAs of zCOX-1 and zCOX-2 were cloned and assigned to conserved regions of chromosomes 5 and 2, respectively. The deduced proteins are 67% homologous with their human orthologs. Prostaglandin (PG) E(2) is the predominant zCOX product detected by mass spectrometry. Pharmacological inhibitors demonstrate selectivity when directed against heterologously expressed zCOX isoforms. Zebrafish **thrombocyte** aggregation ex vivo and hemostasis in vivo are sensitive to inhibition of zCOX-1, but not zCOX-2. Both zCOXs were widely expressed during development, and knockdown of zCOX-1 causes growth arrest during early embryogenesis. zCOX-1 is widely evident in the embryonic vasculature, whereas zCOX-2 exhibits a more restricted pattern of expression. Both zCOX isoforms are genetically and functionally homologous to their mammalian orthologs. The zebrafish affords a tractable model system for the study of COX biology and development.

L55 ANSWER 20 OF 29 EMBASE COPYRIGHT (c) 2007 Elsevier B.V. All rights reserved on STN
ACCESSION NUMBER: 2003447855 EMBASE Full-text
TITLE: Fishing for COX inhibitors.
AUTHOR: Frantz S.
SOURCE: Nature Reviews Drug Discovery, (2002) Vol. 1, No. 7, pp. 486. .
Refs: 1
ISSN: 1474-1776 CODEN: NRDDAG
COUNTRY: United Kingdom
DOCUMENT TYPE: Journal; Note
FILE SEGMENT: 029 Clinical Biochemistry
030 Pharmacology
037 Drug Literature Index
LANGUAGE: English
ENTRY DATE: Entered STN: 20 Nov 2003
Last Updated on STN: 20 Nov 2003
ED Entered STN: 20 Nov 2003
Last Updated on STN: 20 Nov 2003

L55 ANSWER 21 OF 29 EMBASE COPYRIGHT (c) 2007 Elsevier B.V. All rights reserved on STN
ACCESSION NUMBER: 2001282635 EMBASE Full-text
TITLE: Angiogenesis and chronic disease.
AUTHOR: Gerritsen M.E.
CORPORATE SOURCE: M.E. Gerritsen, Dept. of Cardiovascular Research, Genentech Inc., DNA Way, South San Francisco, CA 94080, United States. meg@gene.com

SOURCE: Trends in Molecular Medicine, (2001) Vol. 7, No. 8, pp. 333-334. .
Refs: 2
ISSN: 1471-4914 CODEN: TMMRCY
COUNTRY: United Kingdom
DOCUMENT TYPE: Journal; Conference Article
FILE SEGMENT: 005 General Pathology and Pathological Anatomy
008 Neurology and Neurosurgery
016 Cancer
018 Cardiovascular Diseases and Cardiovascular Surgery
029 Clinical Biochemistry
LANGUAGE: English
SUMMARY LANGUAGE: English
ENTRY DATE: Entered STN: 23 Aug 2001
Last Updated on STN: 23 Aug 2001
ED Entered STN: 23 Aug 2001
Last Updated on STN: 23 Aug 2001
AB The meeting 'Angiogenesis and Chronic Diseases' along with the parallel event 'Cellular and Molecular Events in the Pathogenesis of Atherosclerosis', was held in Keystone CO, USA, 24-29 April, 2001. These gatherings integrated two high-profile areas of vascular biology with some excellent late-spring skiing and beautiful weather. Highlights of the angiogenesis part of the meeting are described below.

L55 ANSWER 22 OF 29 EMBASE COPYRIGHT (c) 2007 Elsevier B.V. All rights reserved on STN
ACCESSION NUMBER: 2000408876 EMBASE Full-text
TITLE: The expanding superfamily of phospholipase A2 enzymes: Classification and characterization.
AUTHOR: Six D.A.; Dennis E.A.
CORPORATE SOURCE: E.A. Dennis, Dept. of Chemistry and Biochemistry, Revelle College/School of Medicine, University of California, San Diego, CA 92093-0601, United States. edennis@ucsd.edu
SOURCE: Biochimica et Biophysica Acta - Molecular and Cell Biology of Lipids, (31 Oct 2000) Vol. 1488, No. 1-2, pp. 1-19. .
Refs: 189
ISSN: 1388-1981 CODEN: BBMLFG
PUBLISHER IDENT.: S 1388-1981(00)00105-0
COUNTRY: Netherlands
DOCUMENT TYPE: Journal; General Review
FILE SEGMENT: 029 Clinical Biochemistry
LANGUAGE: English
SUMMARY LANGUAGE: English
ENTRY DATE: Entered STN: 14 Dec 2000
Last Updated on STN: 14 Dec 2000
ED Entered STN: 14 Dec 2000
Last Updated on STN: 14 Dec 2000
AB The phospholipase A2 (PLA2) superfamily consists of a broad range of enzymes defined by their ability to catalyze the hydrolysis of the middle (sn-2) ester bond of substrate phospholipids. The hydrolysis products of this reaction, free fatty acid and lysophospholipid, have many important downstream roles, and are derived from the activity of a diverse and growing superfamily of PLA2 enzymes. This review updates the classification of the various PLA2's now described in the literature. Four criteria have been employed to classify these proteins into one of the 11 Groups (I-XI) of PLA2's. First, the enzyme must catalyze the hydrolysis of the sn-2 ester bond of a natural phospholipid substrate, such as long fatty acid chain phospholipids, platelet activating factor, or short fatty acid chain oxidized phospholipids. Second, the complete amino acid sequence of the mature protein must be known. Third, each

PLA2 Group should include all of those enzymes that have readily identifiable sequence homology. If more than one homologous PLA2 gene exists within a species, then each paralog should be assigned a Subgroup letter, as in the case of Groups IVA, IVB, and IVC PLA2. Homologs from different species should be classified within the same Subgroup wherever such assignments are possible as is the case with **zebra fish** and human Group IVA PLA2 orthologs. The current classification scheme does allow for historical exceptions of the highly homologous Groups I, II, V, and X PLA2's. Fourth, catalytically active splice variants of the same gene are classified as the same Group and Subgroup, but distinguished using Arabic numbers, such as for Group VIA-1 PLA2 and VIA-2 PLA2's. These four criteria have led to the expansion or realignment of Groups VI, VII and VIII, as well as the addition of Group XI PLA2 from plants. (C) 2000 Elsevier Science B.V.

L55 ANSWER 23 OF 29 EMBASE COPYRIGHT (c) 2007 Elsevier B.V. All rights reserved on STN

ACCESSION NUMBER: 1999312297 EMBASE Full-text
TITLE: F-spondin and mindin: Two structurally and functionally related genes expressed in the hippocampus that promote outgrowth of embryonic hippocampal neurons.
AUTHOR: Feinstein Y.; Borrell V.; Garcia C.; Burstyn-Cohen T.; Tzarfaty V.; Frumkin A.; Nose A.; Okamoto H.; Higashijima S.-I.; Soriano E.; Klar A.
CORPORATE SOURCE: A. Klar, Department Anatomy and Cell Biology, Hebrew University-Hadassah Med. Sch., PO Box 12272, Jerusalem, 91120, Israel. avihu@cc.huji.ac.il
SOURCE: Development, (1999) Vol. 126, No. 16, pp. 3637-3648. .
Refs: 39
ISSN: 0950-1991 CODEN: DEVPED
COUNTRY: United Kingdom
DOCUMENT TYPE: Journal; Article
FILE SEGMENT: 008 Neurology and Neurosurgery
021 Developmental Biology and Teratology
022 Human Genetics
LANGUAGE: English
SUMMARY LANGUAGE: English
ENTRY DATE: Entered STN: 27 Sep 1999
Last Updated on STN: 27 Sep 1999
ED Entered STN: 27 Sep 1999
Last Updated on STN: 27 Sep 1999

AB Extracellular matrix (ECM) proteins play an important role in early cortical development, specifically in the formation of neural connections and in controlling the cyto-architecture of the central nervous system. F-spondin and Mindin are a family of matrix-attached adhesion molecules that share structural similarities and overlapping domains of expression. Genes for both proteins contain a **thrombospondin** type I repeat(s) at the C terminus and an FS1-FS2 (spondin) domain. Both the vertebrate F-spondin and the zebrafish mindins are expressed on the embryonic floor plate. In the current study we have cloned the rat homologue of mindin and studied its expression and activity together with F-spondin in the developing rodent brain. The two genes are abundantly expressed in the developing hippocampus. In vitro studies indicate that both F-spondin and Mindin promote adhesion and outgrowth of hippocampal embryonic neurons. We have also demonstrated that the two proteins bind to a putative receptor(s) expressed on both hippocampal and sensory neurons.

L55 ANSWER 24 OF 29 EMBASE COPYRIGHT (c) 2007 Elsevier B.V. All rights reserved on STN

ACCESSION NUMBER: 1999431928 EMBASE Full-text
TITLE: Intramolecularly quenched BODIPY-labeled phospholipid, analogs in phospholipase A2 and platelet-activating factor acetylhydrolase assays and in vivo fluorescence imaging.
AUTHOR: Hendrickson H.S.; Hendrickson E.K.; Johnson I.D.; Farber S.A.
CORPORATE SOURCE: H.S. Hendrickson, Department of Chemistry, University of Washington, Seattle, WA 98133-1700, United States. hend@u.washington.edu
SOURCE: Analytical Biochemistry, (1999) Vol. 276, No. 1, pp. 27-35. .
Refs: 30
ISSN: 0003-2697 CODEN: ANBCA2
COUNTRY: United States
DOCUMENT TYPE: Journal; Article
FILE SEGMENT: 029 Clinical Biochemistry
LANGUAGE: English
SUMMARY LANGUAGE: English
ENTRY DATE: Entered STN: 29 Dec 1999
Last Updated on STN: 29 Dec 1999
ED Entered STN: 29 Dec 1999
Last Updated on STN: 29 Dec 1999
AB Phospholipase substrate analogs containing both a fluorescent BODIPY group and a quenching 2,4-dinitrophenyl (DNP) group were synthesized. They showed little fluorescence, but upon hydrolysis became fluorescent as the quenching group was removed. Two substrates were phosphatidylethanolamine analogs with a BODIPY-pentanoyl group at the sn-2 position and DNP linked to the amino head group. The third was a phosphatidylcholine analog with a BODIPY-labeled alkyl ether at the sn-1 position and a N-(DNP)-8-amino- octanoyl group at the sn-2 position. These compounds were evaluated as substrates for cytosolic (85 kDa) phospholipase A2 (cPLA2) and plasma platelet-activating factor acetylhydrolase (rPAF-AH). Two were good substrates for cPLA2 (specific activities: 18 and 5 nmol min-1 mg-1) and all were good for rPAF-AH (specific activities: 17, 11, and 6 μmol min-1 mg-1). The minimal amount of enzyme detectable was 50 ng for cPLA2 and 0.1 ng for rPAF-AH. These substrates were active in assays of PLA2 in zebrafish embryo extracts and one was well suited for imaging of PLA2 activity in living zebrafish embryos. Embryos were injected with substrate at the one- to four-cell stage and allowed to develop until early somitogenesis when endogenous PLA2 activity increases dramatically; substrate persisted (12 h) and specifically labeled cells of the developing notochord.

L55 ANSWER 25 OF 29 EMBASE
ACCESSION NUMBER: 1998045818 EMBASE Full-text
TITLE: Mindin/F-spondin family: Novel ECM proteins expressed in the zebrafish embryonic axis.
AUTHOR: Higashijima S.-I.; Nose A.; Eguchi G.; Hotta Y.; Okamoto H.
CORPORATE SOURCE: S.-I. Higashijima, National Institute for Basic Biology, Myodaiji-cho, Okazaki Aichi 444, Japan. shinichi@nibb.ac.jp
SOURCE: Developmental Biology, (15 Dec 1997) Vol. 192, No. 2, pp. 211-227. .
Refs: 41
ISSN: 0012-1606 CODEN: DEBIAO
COUNTRY: United States
DOCUMENT TYPE: Journal; Article
FILE SEGMENT: 021 Developmental Biology and Teratology
LANGUAGE: English
SUMMARY LANGUAGE: English
ENTRY DATE: Entered STN: 5 Mar 1998

Last Updated on STN: 5 Mar 1998
ED Entered STN: 5 Mar 1998
Last Updated on STN: 5 Mar 1998
AB F-spondin is a secreted protein expressed at high levels by the floor plate cells. The C-terminal half of the protein contains six **thrombospondin** type 1 repeats, while the N-terminal half exhibited virtually no similarity to any other protein until recently, when a Drosophila gene termed M-spondin was cloned; its product was found to share two conserved domains with the N-terminal half of F-spondin. We report the molecular cloning of four zebrafish genes encoding secreted proteins with these conserved domains. Two are zebrafish homologs of F-spondin, while the other two, termed mindin1 and mindin2, encode mutually related novel proteins, which are more related to the Drosophila M-spondin than to F-spondin. During embryonic development, all four genes are expressed in the floor plate cells. In addition to the floor plate, mindin1 is expressed in the hypochord cells, while mindin2 is expressed in the sclerotome cells. When ectopically expressed, Mindin proteins selectively accumulate in the basal lamina, suggesting that Mindins are extracellular matrix (ECM) proteins with high affinity to the basal lamina. We also report the spatial distribution of one of the F-spondin proteins, F-spondin2. F-spondin2 is localized to the thread-like structure in the central canal of the spinal cord, which is likely to correspond to Reissner's fiber known to be present in the vertebrate phylum. In summary, our study has defined a novel gene family of ECM molecules in the vertebrate, all of which may potentially be involved in development of the midline structure.

L55 ANSWER 26 OF 29 EMBASE COPYRIGHT (c) 2007 Elsevier B.V. All rights reserved on STN
ACCESSION NUMBER: 96137264 EMBASE Full-text
DOCUMENT NUMBER: 1996137264
TITLE: Identification and characterization of a new major histocompatibility complex class I gene in carp (Cyprinus carpio L.).
AUTHOR: Van Erp S.H.M.; Dixon B.; Figueroa F.; Egberts E.; Stet R.J.M.
CORPORATE SOURCE: Dept Exptl Anim Morphol Cell Biol, Wageningen Agricultural University, PO Box 338,6700 AH Wageningen, Netherlands
SOURCE: Immunogenetics, (1996) Vol. 44, No. 1, pp. 49-61. .
ISSN: 0093-7711 CODEN: IMNGBK
COUNTRY: Germany
DOCUMENT TYPE: Journal; Article
FILE SEGMENT: 022 Human Genetics
026 Immunology, Serology and Transplantation
LANGUAGE: English
SUMMARY LANGUAGE: English
ENTRY DATE: Entered STN: 20 May 1996
Last Updated on STN: 20 May 1996
ED Entered STN: 20 May 1996
Last Updated on STN: 20 May 1996
AB In this study we report the finding of three representatives of a new group of major histocompatibility complex class I sequences in carp: Cyca-12 (CycaUA1*01), a full-length cDNA; Cyca-SP1 (Cyca-UAW1), a polymerase chain reaction (PCR) fragment from cDNA; and Cyca-G11 (Cyca-UA1(*)02), a partial genomic clone. Comparison of the amino acid sequences of Cyca-12, CycaSP1, and Cyca-G11 with classical and non-classical class I sequences from other species shows considerable conservation in regions that have been shown to be involved in maintaining the structure and function of class I molecules. The genomic organization of Cyca-12 has been elucidated by analysis of a partial genomic clone Cyca-G11, in combination with PCR amplifications on genomic DNA of a homozygous individual. Although the genomic organization is similar to

that found in class I genes from other species, the 3' untranslated region contains an intron which is unprecedented in class I genes, and intron 2 is exceptionally large (± 14 kilobases). Southern blot analysis indicates the presence of multiple related sequences. In phylogenetic analyses, the Cyca-UA sequences cluster with class I genes from zebrafish and Atlantic salmon, indicating that the ancestral gene arose before the salmonid/cyprinid split, approximately 120-150 million years ago. The previously reported class I Cyca-Z genes from carp and Caau-Z genes from goldfish cluster as a completely separate lineage. A polyclonal antiserum (anti-Cyca12) was raised against a recombinant fusion protein containing most of the extracellular domains of Cyca-12. The antibodies showed substantial reactivity to the recombinant protein and an M(r) 45000 protein in membrane lysates of spleen and muscle, as well as to determinants present on leucocytes in fluorescence-activated cell sorter analyses. Erythrocytes and **thrombocytes** were found to be negative.

L55 ANSWER 27 OF 29 BIOSIS COPYRIGHT (c) 2007 The Thomson Corporation on STN

ACCESSION NUMBER: 2004:140285 BIOSIS Full-text
DOCUMENT NUMBER: PREV200400133681
TITLE: Cloning and characterizing **zebrafish** c-mpl and confirming its regulatory role in **zebrafish thrombopoiesis.**
AUTHOR(S): Lin, Hui Feng [Reprint Author]; Handin, Robert I. [Reprint Author]
CORPORATE SOURCE: Hematology, Medicine, Brigham and Women's Hospital, Boston, MA, USA
SOURCE: Blood, (November 16 2003) Vol. 102, No. 11, pp. 327a. print.
Meeting Info.: 45th Annual Meeting of the American Society of Hematology. San Diego, CA, USA. December 06-09, 2003. American Society of Hematology.
CODEN: BLOOAW. ISSN: 0006-4971.
DOCUMENT TYPE: Conference; (Meeting)
Conference; (Meeting Poster)
Conference; Abstract; (Meeting Abstract)
LANGUAGE: English
ENTRY DATE: Entered STN: 10 Mar 2004
Last Updated on STN: 10 Mar 2004
ED Entered STN: 10 Mar 2004
Last Updated on STN: 10 Mar 2004

AB Zebrafish are an increasingly popular model animal for genetic and developmental studies. In order to investigate thrombocyte development in zebrafish, we have generated transgenic fish lines that express green fluorescent protein in their thrombocytes (GFP-thrombocytes). They were created by fusing the GFP cDNA, in frame, to the Glycoprotein IIb (alphaIIb) promoter. GFP positive thrombocytes appear in the circulation 48 hours post fertilization. In addition to the circulating pool of cells, thrombocyte precursors are first detected in the ventral wall of the dorsal artery and then in the mesonephros, the site of definitive hematopoiesis in teleosts. We were able to obtain cell populations from adult blood and mesonephric suspensions that were significantly enriched for thrombocytes by fluorescence activated cell sorting (FACS), using GFP fluorescence as the thrombocyte marker. The thrombocyte-enriched cell pool provides an excellent source of mRNA for constructing thrombocyte-enriched cDNA libraries from which to isolate thrombocyte-specific cDNAs. Thrombopoietin binding to its cognate receptor, c-mpl, is an important regulator of megakaryocyte/thrombocyte production in other species. To confirm the existence of this pathway in zebrafish, we identified a putative c-mpl gene in the draft zebrafish genome and used it to design primers for the isolation of zebrafish c-mpl mRNA from

the thrombocyte-enriched cDNA library. The full-length cDNA was then sequenced and showed that zebrafish c-mpl shares 29% identity (37% similarity) with its human counterpart. A c-mpl anti-sense morpholino was then injected into single cell embryos in an attempt to inhibit c-mpl expression during embryonic and fetal hematopoiesis. The production of GFP positive thrombocytes in zebrafish embryos was greatly reduced, while the production of the erythrocytes and myelocytes was not affected. In addition, whole mount in situ hybridization with c-mpl cRNA demonstrated that c-mpl expression is restricted to thrombocytes and their progenitors. Our results provide evidence that the thrombopoietic pathway is highly conserved in vertebrates, and that zebrafish may provide a useful model to study the process. The ease of carrying out genetic manipulations and the optical clarity of developing embryos coupled with the availability of GFP-positive thrombocyte strains will facilitate such studies.

L55 ANSWER 28 OF 29 BIOSIS COPYRIGHT (c) 2007 The Thomson Corporation on STN

ACCESSION NUMBER: 2002:129723 BIOSIS Full-text
DOCUMENT NUMBER: PREV200200129723
TITLE: The analysis of **thrombocyte** development in **zebrafish** (Danio rario) harboring early hematopoietic or erythroid mutations.
AUTHOR(S): Lin, Hui-Feng [Reprint author]; Paw, Barry H. [Reprint author]; Zon, Leonard I.; Handin, Robert I. [Reprint author]
CORPORATE SOURCE: Medicine/Hematology, Brigham and Women's Hospital, Boston, MA, USA
SOURCE: Blood, (November 16, 2001) Vol. 98, No. 11 Part 1, pp. 69a. print.
Meeting Info.: 43rd Annual Meeting of the American Society of Hematology, Part 1. Orlando, Florida, USA. December 07-11, 2001. American Society of Hematology.
CODEN: BLOOAW. ISSN: 0006-4971.
DOCUMENT TYPE: Conference; (Meeting)
Conference; Abstract; (Meeting Abstract)
Conference; (Meeting Poster)
LANGUAGE: English
ENTRY DATE: Entered STN: 6 Feb 2002
Last Updated on STN: 26 Feb 2002
ED Entered STN: 6 Feb 2002
Last Updated on STN: 26 Feb 2002

AB The zebrafish (Danio rario) is becoming an increasingly popular animal model for studying genes that are critical for normal tissue and cellular development. It is possible to observe cell and tissue development within the optically clear zebrafish embryos and achieve saturation mutagenesis with chemical mutagens and produce a large number of mutant phenotypes. We have previously shown that zebrafish thrombocytes express the GpIIb/IIIa (alphaIIb/beta3) integrin complex and have used the technique of in situ hybridization with an alphaIIb subunit probe to demonstrate the presence of circulating thrombocytes in developing embryos. alphaIIb mRNA is detected by RT-PCR 42 hours post fertilization (hpf) and circulating thrombocytes are observed by in situ hybridization 48 hpf. Thrombocytes are detected throughout the circulation but are most readily detected in the cardiac blood pool and in the tail circulation of developing embryos. Data obtained from mammalian cell culture and the selective knock out of murine genes like GATA-1, NFE-2 and FOG suggest a close relationship between erythroid and megakaryocytic development and the probable existence of a bipotential, i.e. erythroid and megakaryocytic, progenitor cell. However, some mutations, like the NFE-2 knockout interfere with the terminal differentiation of polyploid

megakaryocytes and the budding of platelets rather than with earlier steps like lineage commitment. Since zebrafish thrombocytes are diploid nucleated cells it is not clear that mutations causing thrombocytopenia in mammals would also impair thrombocyte development. While it is not yet possible to selectively inactivate zebrafish genes, erythroid mutants are available from prior developmental screens that could be analyzed for concomitant thrombocyte defects. We chose, for study, a set of well-characterized early, intermediate and late stage developmental mutants that all were anemic. No circulating thrombocytes were detected by in situ hybridization in the two early stage mutants cloche and spadetail which are thought to have defects in early stem cell specification resulting in profound defects in blood and endothelial cell development. We then examined retsina and frascati, two late stage mutants, which were noted to be anemic but without other defects in the initial morphologic screen. Retsina, which has a defect in terminal erythroid maturation, had a normal number of circulating thrombocytes and frascati, a mutant with profound hypochromic anemia, had an increased number of thrombocytes. We then examined two 'intermediate' mutants with erythroid but no vascular or other discernible defects. One mutant, vlad tepes, contains a mutant GATA-1 allele and the second, moonshine, has a mutant gene that regulates GATA-1 expression. Both vlad tepes and moonshine embryos have normal numbers of circulating thrombocytes 48-72 hpf. These studies suggest that zebrafish thrombocyte development closely parallels the developmental sequence previously described for the mammalian megakaryocyte. The clear discrepancy between red cell and thrombocyte development in moonshine and vlad tepes suggests that these mutations may occur at a point in hematopoietic development when commitment of the thrombocyte lineage has already occurred. The identification of zebrafish mutants with selective defects in thrombocyte development may provide a way to pinpoint this branchpoint as well as the genetic interactions that lead to erythrocyte and thrombocyte development.

L55 ANSWER 29 OF 29 BIOSIS COPYRIGHT (c) 2007 The Thomson Corporation on STN

ACCESSION NUMBER: 2001:299453 BIOSIS Full-text
DOCUMENT NUMBER: PREV200100299453
TITLE: **Thrombocyte** development in the **Zebrafish (Danio Rerio)**.
AUTHOR(S): Lin, Hui-Feng [Reprint author]; Freedman, Matthew; Zhou, Yi; Zon, Leonard; Handin, Robert I. [Reprint author]
CORPORATE SOURCE: Med/Heme, Brigham and Women's Hospital, Boston, MA, USA
SOURCE: Blood, (November 16, 2000) Vol. 96, No. 11 Part 1, pp. 36a. print.
Meeting Info.: 42nd Annual Meeting of the American Society of Hematology. San Francisco, California, USA. December 01-05, 2000. American Society of Hematology.
CODEN: BLOOAW. ISSN: 0006-4971.
DOCUMENT TYPE: Conference; (Meeting)
Conference; Abstract; (Meeting Abstract)
LANGUAGE: English
ENTRY DATE: Entered STN: 20 Jun 2001
Last Updated on STN: 19 Feb 2002
ED Entered STN: 20 Jun 2001
Last Updated on STN: 19 Feb 2002

AB Zebrafish provide a useful model to study hematopoietic development, as large numbers of their eggs can be readily harvested and externally fertilized. The resulting embryos are optically clear, permitting close observation of organogenesis. In order to initiate studies of thrombocyte development, we cloned the full-length cDNA of the alphaIIb subunit of the alphaIIb/beta3 integrin (GpIIb/IIIa) from a Zebrafish kidney cDNA library. This cDNA was chosen because its expression is restricted to mammalian megakaryocytes and

platelets. Zebrafish alphaIIb cDNA was 42% homologous to the mouse and human sequence, with conservation of the Ca++ binding domain, the GFFKR motif and a long stretch of acidic residues at the C terminus of the subunit protein. The alphaIIb gene maps to a Zebrafish linkage group 3 chromosome that is syntenic with human chromosome 17-the locus of the human alphaIIb gene. Oligonucleotides derived from the Zebrafish alphaIIb sequence were used for RT-PCR analysis of alphaIIb mRNA from developing embryos. alphaIIb mRNA appeared 42 hours post fertilization (hpf) and persisted throughout embryonic development. In situ hybridization using digoxigenin labeled cRNA demonstrated punctate staining within the developing vasculature by 72 hpf. Examination of histologic sections of adult fish showed alphaIIb positive cells in the mesonephros, the site of definitive hematopoiesis in fish. A 1.8 kb fragment 5' to the alphaIIb cDNA was cloned from a Zebrafish genomic library and compared to the human and murine alphaIIb promoters. Although the sequences were not highly homologous, several potential GATA1 sites and Ets binding motifs were noted. This putative promoter sequence was fused to Green Fluorescent Protein (GFP) and used to transfect Human Erythroleukemia (HEL) cells. GFP-positive HEL cells were observed 48 hours after transfection and, after selection in G418, stable GFP-positive cell lines were derived. The alphaIIb promoter-GFP constructs were then injected into single cell Zebrafish embryos. Fluorescent circulating thrombocytes were observed in several embryos at 48 hpf. Zebrafish harboring fluorescent platelets are being raised and will be bred to produce transgenic strains expressing GFP-positive platelets. These studies provide new information about the developmental sequence of Zebrafish thrombocytes, the fish equivalent to the megakaryocyte/platelet. These transgenic Zebrafish strains may be useful for studying platelet-vessel wall interactions in real time and for designing developmental screens to detect genes that are important for thrombocyte lineage commitment and maturation.

```
=> d his full

     (FILE 'HOME' ENTERED AT 15:23:41 ON 09 MAR 2007)

     FILE 'CAPLUS' ENTERED AT 15:23:55 ON 09 MAR 2007
               E US2005-525571/APPS
L1             1 SEA ABB=ON  PLU=ON  US2005-525571/AP
               D IALL
               E JAGADEESWARAN P/AU
L2            52 SEA ABB=ON  PLU=ON  JAGADEESWARAN P?/AU
L3             9 SEA ABB=ON  PLU=ON  L2 AND THROMB?
L4            12 SEA ABB=ON  PLU=ON  L2 AND (ZEBRA? OR ?FISH)
L5            13 SEA ABB=ON  PLU=ON  (L3 OR L4)

     FILE 'CAPLUS' ENTERED AT 15:27:00 ON 09 MAR 2007
               D QUE L5
               D IBIB ED AB L5 1-13

     FILE 'HOME' ENTERED AT 15:27:57 ON 09 MAR 2007
               D SCAN L5

     FILE 'CAPLUS' ENTERED AT 15:28:12 ON 09 MAR 2007
               D SCAN L5

     FILE 'ZCAPLUS' ENTERED AT 15:28:51 ON 09 MAR 2007
               E ANTICOAGULANTS+NT/CT
               E COAGULANTS+NT/CT
               E COAGULATION+NT/CT
               E THROMBOSIS+NT/CT
               E THROMBUS+NT/CT

     FILE 'CAPLUS' ENTERED AT 15:30:59 ON 09 MAR 2007
               E ZEBRAFISH/CT
               E E3+ALL
               E E2+ALL
L6          5857 SEA ABB=ON  PLU=ON  DANIO RERIO+PFT/CT
L7        181564 SEA ABB=ON  PLU=ON  ?COAGULA? OR PLATELET AGGREGATION INHIBIT?

L8        165295 SEA ABB=ON  PLU=ON  HEMOLYSIS OR HEMORRHAG? OR THROMB?
L9            71 SEA ABB=ON  PLU=ON  L6 AND (L7 OR L8)
L10        44898 SEA ABB=ON  PLU=ON  (?COAGULA?/CW OR PLATELET AGGREGATION
               INHIBIT?/CW)
L11        52206 SEA ABB=ON  PLU=ON  (HEMOLYSIS/CW OR HEMORRHAG?/CW OR THROMB?/C
               W)
L12        19497 SEA ABB=ON  PLU=ON  ANTICOAG?/CW
L13           26 SEA ABB=ON  PLU=ON  L6 AND (L10 OR L11 OR L12)
L14            3 SEA ABB=ON  PLU=ON  L6 AND (L12 OR L10) AND L11
               D SCAN TI
L15            2 SEA ABB=ON  PLU=ON  L14 NOT L5
               D SCAN

     FILE 'MEDLINE' ENTERED AT 15:41:01 ON 09 MAR 2007
               E JAGADEESWARAN P/AU
L16           54 SEA ABB=ON  PLU=ON  JAGADEESWARAN P?/AU
L17           28 SEA ABB=ON  PLU=ON  L16 AND (?THROMB? OR ?COAGULA?)
L18           24 SEA ABB=ON  PLU=ON  L16 AND ZEBRAFISH
L19           19 SEA ABB=ON  PLU=ON  L17 AND L18
               D TRIAL 1-19
```

```
                E BLOOD COAGULATION+ALL/CT
L20         41718 SEA ABB=ON  PLU=ON  BLOOD COAGULATION+NT/CT
L21        150796 SEA ABB=ON  PLU=ON  ANTICOAGULANTS+NT/CT
L22        107337 SEA ABB=ON  PLU=ON  THROMBOSIS+NT/CT
L23          5582 SEA ABB=ON  PLU=ON  ZEBRAFISH/CT
L24            36 SEA ABB=ON  PLU=ON  L23 AND (L20 OR L21 OR L22)
L25             1 SEA ABB=ON  PLU=ON  L23 AND L22 AND (L20 OR L21)
L26             0 SEA ABB=ON  PLU=ON  L25 NOT L19
                D TRIAL L24 1-10
L27         74484 SEA ABB=ON  PLU=ON  L22/MAJ
L28             6 SEA ABB=ON  PLU=ON  L23 AND L27
                D TRIAL 1-6
L29             0 SEA ABB=ON  PLU=ON  L28 NOT L19
L30             0 SEA ABB=ON  PLU=ON  L23 AND L22 NOT L19

     FILE 'EMBASE' ENTERED AT 15:56:00 ON 09 MAR 2007
                E ZEBRAFISH+ALL/CT
                E E2+ALL
                E THROMBOSIS+ALL/CT
                E JAGADEESWARAN P/AU
L31            44 SEA ABB=ON  PLU=ON  JAGADEESWARAN P/AU
L32             9 SEA ABB=ON  PLU=ON  THROMBO? AND L31
L33            20 SEA ABB=ON  PLU=ON  ZEBRA FISH AND L31
L34            21 SEA ABB=ON  PLU=ON  (L32 OR L33)
L35          5198 SEA ABB=ON  PLU=ON  ZEBRA FISH
L36        296951 SEA ABB=ON  PLU=ON  THROMBO?
L37            24 SEA ABB=ON  PLU=ON  L35 AND L36 NOT L34
                D TRIAL 1-24

     FILE 'BIOSIS' ENTERED AT 16:02:07 ON 09 MAR 2007
                E JAGADEESWARAN P/AU
L38            61 SEA ABB=ON  PLU=ON  JAGADEESWARAN P?/AU
L39         10056 SEA ABB=ON  PLU=ON  DANIO RERIO OR ZEBRA FISH? OR ZEBRAFISH?
L40        254290 SEA ABB=ON  PLU=ON  THROMB? OR ANTI (W) (THROMB? OR COAG?) OR
                ANTITHROMB? OR ANTICOAG?
L41            21 SEA ABB=ON  PLU=ON  L38 AND (L39 OR L40)
L*** DEL       16 S L40 AND L41
L42            32 SEA ABB=ON  PLU=ON  L39 AND (L40 OR COAG?) NOT L41
L43          6310 SEA ABB=ON  PLU=ON  (DANIO RERIO/TI OR ZEBRA FISH?/TI OR
                ZEBRAFISH?/TI)
L44        120164 SEA ABB=ON  PLU=ON  (THROMB?/TI OR ANTI/TI (W) (THROMB?/TI OR
                COAG?/TI) OR ANTITHROMB?/TI OR ANTICOAG?/TI) OR COAG?/TI
L45             4 SEA ABB=ON  PLU=ON  L43 AND L44 NOT L41
                D SCAN

     FILE 'WPIX' ENTERED AT 16:09:21 ON 09 MAR 2007
                E JAGADEESWARAN P/AU
L46             4 SEA ABB=ON  PLU=ON  JAGADEESWA?/AU
                D SCAN
L47             2 SEA ABB=ON  PLU=ON  L46 AND (ZEBRAFISH OR COAGULATION)/TI
L48           290 SEA ABB=ON  PLU=ON  (DANIO OR BRACHYDANIO) (W) RERIO OR ZEBRA
                FISH? OR ZEBRAFISH? OR ZEBRA DANIO
L49         71646 SEA ABB=ON  PLU=ON  THROMB? OR ANTI (W) (THROMB? OR COAG?) OR
                ANTITHROMB? OR ANTICOAG? OR COAGULA? OR PROTHROMB?
L50             7 SEA ABB=ON  PLU=ON  L48 AND L49 NOT L47
                D SCAN
L51             2 SEA ABB=ON  PLU=ON  L49 (25A) L48
L52             1 SEA ABB=ON  PLU=ON  L51 NOT L47
                D SCAN
L53             6 SEA ABB=ON  PLU=ON  L50 NOT L52
```

D TRIAL 1-6

FILE 'MEDLINE' ENTERED AT 16:18:08 ON 09 MAR 2007
D QUE L19

FILE 'EMBASE' ENTERED AT 16:18:15 ON 09 MAR 2007
D QUE L34

FILE 'BIOSIS' ENTERED AT 16:18:22 ON 09 MAR 2007
D QUE L21

FILE 'WPIX' ENTERED AT 16:18:35 ON 09 MAR 2007
D QUE L47

FILE 'CAPLUS, MEDLINE, EMBASE, BIOSIS, WPIX' ENTERED AT 16:18:51 ON 09 MAR 2007
L54 39 DUP REM L5 L19 L34 L41 L47 (37 DUPLICATES REMOVED)
ANSWERS '1-13' FROM FILE CAPLUS
ANSWERS '14-25' FROM FILE MEDLINE
ANSWERS '26-28' FROM FILE EMBASE
ANSWERS '29-38' FROM FILE BIOSIS
ANSWER '39' FROM FILE WPIX
D IBIB ED AB L54 14-38
D IBIB AB ABEX L54 39

FILE 'CAPLUS' ENTERED AT 16:20:25 ON 09 MAR 2007
D QUE L15

FILE 'MEDLINE' ENTERED AT 16:20:31 ON 09 MAR 2007
D QUE L30

FILE 'EMBASE' ENTERED AT 16:20:41 ON 09 MAR 2007
D QUE L37

FILE 'BIOSIS' ENTERED AT 16:20:47 ON 09 MAR 2007
D QUE L45

FILE 'WPIX' ENTERED AT 16:20:54 ON 09 MAR 2007
D QUE L52

FILE 'CAPLUS, EMBASE, BIOSIS, WPIX' ENTERED AT 16:21:11 ON 09 MAR 2007
L55 29 DUP REM L15 L37 L45 L52 (2 DUPLICATES REMOVED)
ANSWERS '1-2' FROM FILE CAPLUS
ANSWERS '3-26' FROM FILE EMBASE
ANSWERS '27-29' FROM FILE BIOSIS
D IBIB ED AB L55 1-29

FILE HOME

FILE CAPLUS

strictly prohibited.

FILE COVERS 1907 - 9 Mar 2007 VOL 146 ISS 12
FILE LAST UPDATED: 8 Mar 2007 (20070308/ED)

Effective October 17, 2005, revised CAS Information Use Policies apply. They are available for your review at:

http://www.cas.org/infopolicy.html

FILE ZCAPLUS

Copyright of the articles to which records in this database refer is held by the publishers listed in the PUBLISHER (PB) field (available for records published or updated in Chemical Abstracts after December 26, 1996), unless otherwise indicated in the original publications. The CA Lexicon is the copyrighted intellectual property of the American Chemical Society and is provided to assist you in searching databases on STN. Any dissemination, distribution, copying, or storing of this information, without the prior written consent of CAS is strictly prohibited.

FILE COVERS 1907 - 9 Mar 2007 VOL 146 ISS 12
FILE LAST UPDATED: 8 Mar 2007 (20070308/ED)

New CAS Information Use Policies, enter HELP USAGETERMS for details.

This file contains CAS Registry Numbers for easy and accurate substance identification.

FILE MEDLINE
FILE LAST UPDATED: 8 Mar 2007 (20070308/UP). FILE COVERS 1950 TO DATE.

All regular MEDLINE updates from November 15 to December 16 have been added to MEDLINE, along with 2007 Medical Subject Headings (MeSH(R)) and 2007 tree numbers.

The annual reload will be available in early 2007.

This file contains CAS Registry Numbers for easy and accurate substance identification.

FILE EMBASE
FILE COVERS 1974 TO 9 Mar 2007 (20070309/ED)

EMBASE is now updated daily. SDI frequency remains weekly (default) and biweekly.

This file contains CAS Registry Numbers for easy and accurate substance identification.

FILE BIOSIS
FILE COVERS 1969 TO DATE.
CAS REGISTRY NUMBERS AND CHEMICAL NAMES (CNs) PRESENT FROM JANUARY 1969 TO DATE.

RECORDS LAST ADDED: 7 March 2007 (20070307/ED)

FILE WPIX

FILE LAST UPDATED: 5 MAR 2007 <20070305/UP>
MOST RECENT THOMSON SCIENTIFIC UPDATE: 200716 <200716/DW>
DERWENT WORLD PATENTS INDEX SUBSCRIBER FILE, COVERS 1963 TO DATE

>>> YOU ARE IN THE NEW AND ENHANCED DERWENT WORLD PATENTS INDEX <<<

>>> New display format FRAGHITSTR available <<<
SEE ONLINE NEWS and
http://www.stn-international.de/archive/stn_online_news/fraghitstr_ex.pdf

>>> IPC Reform reclassification data for the backfile is being loaded into the database during January 2007.
There will not be any update date (UP) written for the reclassified documents, but they can be identified by 20060101/UPIC. <<<

FOR A COPY OF THE DERWENT WORLD PATENTS INDEX STN USER GUIDE, PLEASE VISIT:
http://www.stn-international.de/training_center/patents/stn_guide.pdf

FOR DETAILS OF THE PATENTS COVERED IN CURRENT UPDATES, SEE
http://scientific.thomson.com/support/patents/coverage/latestupdates/

PLEASE BE AWARE OF THE NEW IPC REFORM IN 2006, SEE
http://www.stn-international.de/stndatabases/details/ipc_reform.html and
http://scientific.thomson.com/media/scpdf/ipcrdwpi.pdf

>>> FOR DETAILS ON THE NEW AND ENHANCED DERWENT WORLD PATENTS INDEX PLEASE SEE
http://www.stn-international.de/stndatabases/details/dwpi_r.html <<<

=>